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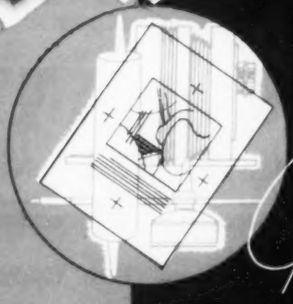

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THE PHOTO-LITHOGRAPHER

Published in the Interests of Lithographers to Increase Sales, Efficiency and Quality

WALTER E. SODERSTROM, *Editor*

RICHARD ROLEY, *Associate Editor* SAMUEL D. WOLFF, *Advertising Manager*

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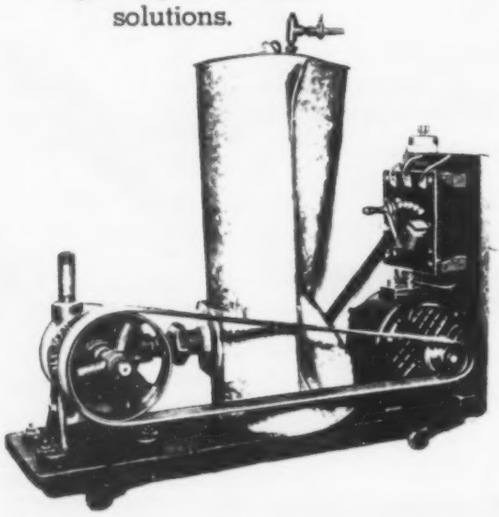

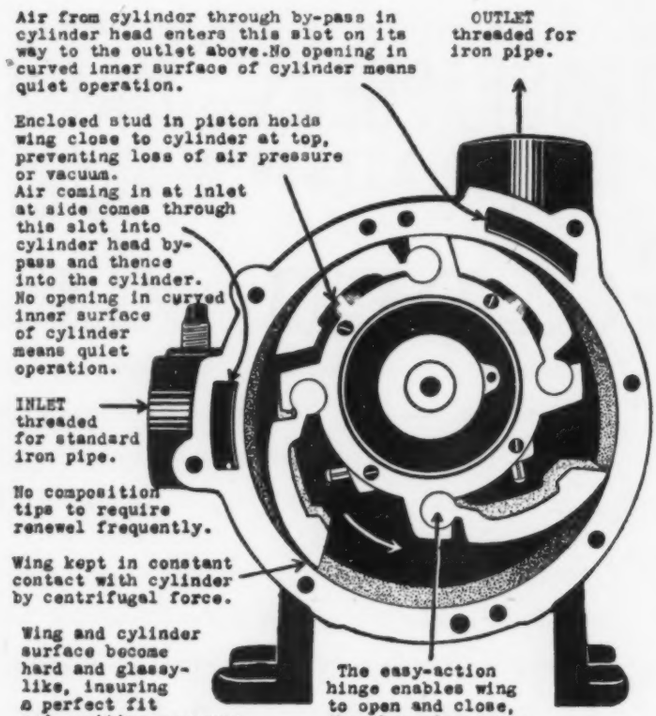
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The recent Annual Convention of the National Association of Photo-Lithographers was a fine demonstration of the helpfulness of concerted action. Many lithographers left that Convention with new inspiration, new ideas, and lots of invaluable information that could not have been obtained in any other way.

The Convention was just a three day culmination to all the other days of the year, in which the Association is working constantly to improve conditions for its members and, indirectly, for the entire industry.

Join N. A. P. L. now . . . for your own sake and as a contribution to the industry that gives you and your employees generous livelihoods. Then you can profit from the better ways of doing things that will be yours for the asking.

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The National Association of Photo-Lithographers

1776 BROADWAY, NEW YORK, N. Y.

THE
PHOTO-LITHOGRAPHER
Published in the Interests of Lithographers Everywhere

The SURFACE *has only been Scratched!*

OBSERVATIONS at the annual convention of the National Association of Photo-Lithographers leave the man on the sidelines in a somewhat bewildered state of mind. So extensive are the developments taking place before our very eyes and with such rapidity do new things come forth, that the wide progress of the photo-offset industry is difficult to appreciate except by those who are close to the picture and who understood the potentialities of these newer things in the field of the graphic arts. Out of the bewilderment of new things and rapid change, one thing stands out upon which most of those who may conflict in their views elsewhere, appear to agree. This is the general acceptance of the idea that the surface has only been scratched in the field of photo-offset and that it bids fair eventually to revolutionize the graphic arts.

Casting about at the national convention of the photo-lithographers, we note a reflection of constant inroads of scientific methods into the old rule-of-thumb. We note the results of chemical research and mechanical engineering progress,—accurate control of pH replacing the outmoded hocus-pocus of the mystery man in the pressroom whose stale beer, tobacco juice, and the like used to be guarded secrets in the offset plant. We see the old-timer who not only refuses to accept this new progress, but continues to buck it with all his stubborn will, pushed to one

side and eventually out of business by the rising tide of scientific advancement.

Listening to the enlivened discussions of new methods and new ideas among the membership of this young and growing lithographic association, and watching its eager desire to move ahead on this tide of scientific progress, we are reminded that present-day lithography did not just grow up like Topsy. Behind everything lies years of research, painstaking research, at a cost in dollars far beyond that possible under the angelship of any one company no matter how large. And when we think of lithographic research and the immeasurable results which it has obtained for the industry, we cannot help but call to mind the Lithographic Technical Foundation and the financial support under the sponsorship of the Lithographers National Association which made the technical foundation possible,—and mentally we doff our hat as a tribute to the fifty-year old L. N. A. and its contribution to progress in the graphic arts.

And then as we circulated further among those at the meeting in Washington, we heard the sound of a harsh note,—the question of price. If offset is to be used in many classes of work as merely a cheap substitute for letterpress, where is it headed? To the dogs, we heard,—plus a few choice bits describing those who use it merely as a low-priced means of beating letterpresscompetition. Stop emphasizing price! This was the sum and substance of the whole idea,—and in it, we heartily concur.

So, out of the maze of discussion, these are the things which stand out and make their presence felt. Offset is only in its infancy. The surface has only been scratched!

Announcement

Not everything published in a trade paper necessarily represents the views of the editor, or for that matter, the publishers. When controversial subjects are presented, the editor may heartily disagree with one side or the other,—but if he wants to turn out a genuinely live, representative paper, he will usually in fairness publish both sides, and let his readers draw their own conclusions. No trade paper honestly trying to serve its industry will duck important controversies. And this is the policy we hope to follow here. Maybe we are "sticking our necks out,"—maybe we will be victimized by writers with an axe to grind,—and this would not be the first time that such has happened to us,—but we still believe that no trade paper which lays claim to serving its industry honestly can, or should side-step controversial matters.

—The Editors.

N. A. P. L. Meets in Washington

The official family: l. to r., 1st row, W. E. Soderstrom, R. M. Collins, Paul Heideke, Capt. L. B. Montfort, A. Fay representing George Loder. Back row, J. R. Zimmerman, John Rollman, S. M. Sears, Merle Schaff, A. G. McCormick, Jr., E. G. Karge representing S. E. Earle, L. B. Rosenstadt, Wm. A. Krueger, Jr. (newly elected) and W. W. Schaumann. Another newly elected director, J. C. Stein, and M. A. Cross, who complete the board, were not present.

THE sixth annual convention of the National Association of Photo-Lithographers, held in Washington at the Wardman Park Hotel, Oct. 6, 7, and 8 was, in every sense of the phrase, a "Share Your Knowledge" gathering. From the opening rap of President Paul Heideke's gavel on Thursday morning, Oct. 6 to the last speaker on Saturday afternoon, Oct. 8, the addresses, discussions, demonstrations, and exhibits were consistently and enthusiastically based on that theme. Said Paul Heideke: "The purpose of our association and of this convention is to present a way by which we can all share in the knowledge each of us, whether plant owner, plant manager, pressman, photographer, or salesman, has acquired, and to form permanent records for the preservation of that knowledge." The way in which all responded to that purpose was an outstanding feature of the convention. Group conferences were broken up time and again in the middle of discussions because of lack of time, and the men in charge of the various exhibits were kept busy every minute explaining their products.

The convention was officially opened by Mr. Heideke on Thursday morning with a letter from George H. Davis, president of the United States Chamber of Commerce, welcoming the N. A. P. L. to Washington. Mr. Davis in his letter pointed out that "business may well look to the trade association for permanent recovery and further expansion." A telegram of best wishes was also read from A. F. Harris, "Grand Old Man of the Graphic Arts," and Chairman of the Board of Harris-Seybold-Potter Co., Cleveland. Then the report of the executive secretary, Walter E. Soderstrom, was read. Mr. Soderstrom outlined the accomplishments of the association office during the past year and the additional services planned for the membership during the coming year. He said that bulletins would be published periodically on subjects such as cost; production capacity standards and hourly rates for equipment; estimating standards, which

would call attention to items that might easily be overlooked in estimating a job, such as opaquing and retouching; information on equipment installation, such as the type of equipment necessary for those wishing to specialize in one kind of work; information on wages and hours legislation, and labor unions; fair trade practices; and bulletins on buyer needs. Mr. Soderstrom told the meeting of the trips which he had taken in the past year and those which were planned during the next to various plants throughout the country to gather information to be added to the "Share Your Knowledge" records. He told of interviews with advertising production men in agencies and departments of companies for the purpose of analyzing their needs. He said that investigations were being made into the various salesman's compensation plans now being used. These and similar subjects, he said, would be reported in the bulletins to members.

Following the secretary's report by Mr. Soderstrom, Archie J. Fay, National Process Co., New York, in the absence of George E. Loder, of that company, read the treasurer's report. The meeting was then adjourned for luncheon. In the afternoon a trip was made to the National Bureau of Standards, which is the testing laboratory of the U. S. Government. A feature of this trip was inspection of a miniature experimental paper mill, where paper from the raw material to the finished product is manufactured. Other laboratories, where everything from materials for model low-price housing to silk hose are tested, were visited under the guidance of laboratory experts. Two bus loads of convention delegates made the trips.

While the visit to the National Bureau of Standards was being made, a bridge party for the ladies was given in the Ladies' Headquarters Suite at the hotel. Prize winners in the bridge competition were Mrs. Fred Wikoff, New York; Mrs. J. A. Belvin, New York; Mrs. Eileen Wood, Attleboro, Mass.; and Mrs. F. W. Weldon, of New York. The party was sponsored by International Printing Ink Corp., General Printing Ink Corp., and Sinclair & Valentine Co., all of New York.

THE convention re-convened later in the afternoon of the first day to hear Capt. L. B. Montfort, legal counsel for the N. A. P. L., on the subject of the "New Maximum Hours and Minimum Wages Law." Capt. Montfort went into a detailed interpretation of the law as it affects the photo-lithographing industry. How the ceiling for hours and the floor for wages will give an added impetus for the necessity for stricter estimating and cost accounting was also pointed out. Each phase of the law was carefully explained so that the plant owner could be absolutely sure of operating within strict compliance.

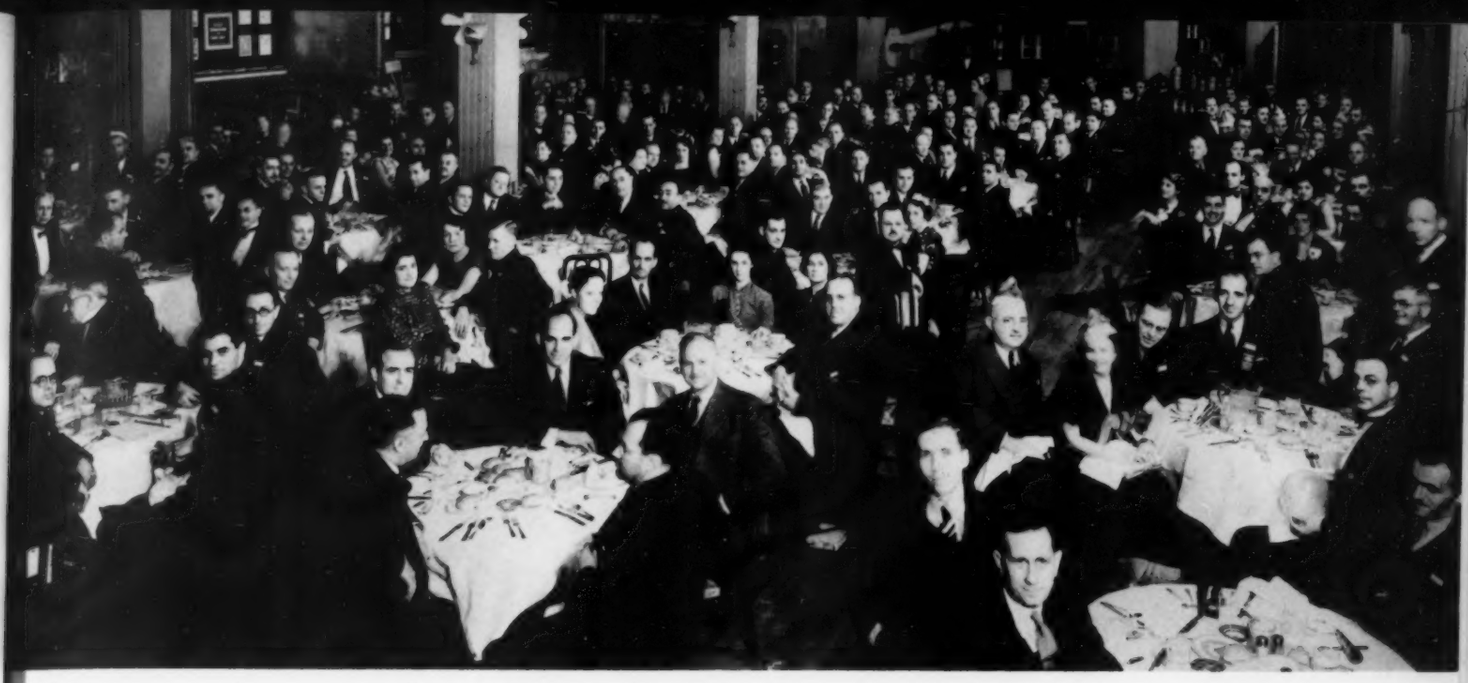
On Friday morning Paul Heideke delivered the annual address of the president. Mr. Heideke said he wanted to thank the members of the association for the fine co-operation which had been extended him as president. It was this spirit, he explained, that had contributed to the fine progress which the association had made in the past year.

Following the president's address, detailed discussions of production, sales and organization problems by members, based on their actual experiences, got under way. John W. Rollman, of Intelligencer Printing Co., Lancaster, Pa., talked on "Salesmen's Compensation." Since Mr. Rollman's talk is carried elsewhere in this issue, it will not be necessary to report it here except to say that it was typical of all the discussions at the convention in that it represented the results of an extensive fact-finding investigation of the subject. Mr. Rollman named the salesmen's compensation plans now in use by one hundred companies, breaking them down into those who paid straight commission, commission and salary, straight salary and other means of compensation. He then presented his conclusions as to what in his opinion had been found to be the best plan for the photo-lithographing plant to adopt.

Lee B. Rosenstadt, of Ardlee Service, Inc., New York, followed Mr. Rollman with a talk on routing work through the plant from the time it is received, to the time it is delivered to the customer. By the aid of a chart showing the days of the week alongside the various production steps which the job takes, Mr. Rosenstadt demonstrated how it was possible to know each hour of the day what progress was being made on the job.

A pleasant surprise was provided members at this session by the appearance of a well-known speaker not on the program. He was R. V. Mitchell, Harris-Seybold-Potter Co., Cleveland. Mr. Mitchell, who was introduced by Summerfield Eney, of Champion Coated Paper and Fiber Co., told of the place of research in the lithographing industry, and described the work of the Lithographic Technical Foundation in Cincinnati and New York. He pointed out that a new era and a new attitude had come into the industry leaving the old, with its rule-of-thumb methods, guess work, and "secret" processes behind. He said that while the Foundation was thirteen years old and had accomplished great things, in actual fact the surface of research had not been scratched. Mr. Mitchell told the convention that it belonged to an industry the end of whose future development was as yet nowhere in sight.

At the close of Mr. Mitchell's address, the convention adjourned to the Dragon Room of the hotel for luncheon, and to hear Benjamin M. Robinson,



member of the New York Bar, talk on "Labor Problems in the Lithographic Industry." Mr. Robinson talked on a highly important and provocative subject, and his complete address is carried in this issue of The Photo-Lithographer. The afternoon sessions were then resumed with group conferences on costs, estimating, accounting, plant layout, specialization vs. general work, developing salesmen, the foreman's value to the plant, new business by advertising, old equipment vs. new, order vs. chaos in organization, price list selling and deep-etch plates. They were led by A. H. Spaulding, Spaulding Moss Co., Boston, and Keith Rosser, Dando Schaff Printing and Publishing Co., Philadelphia.

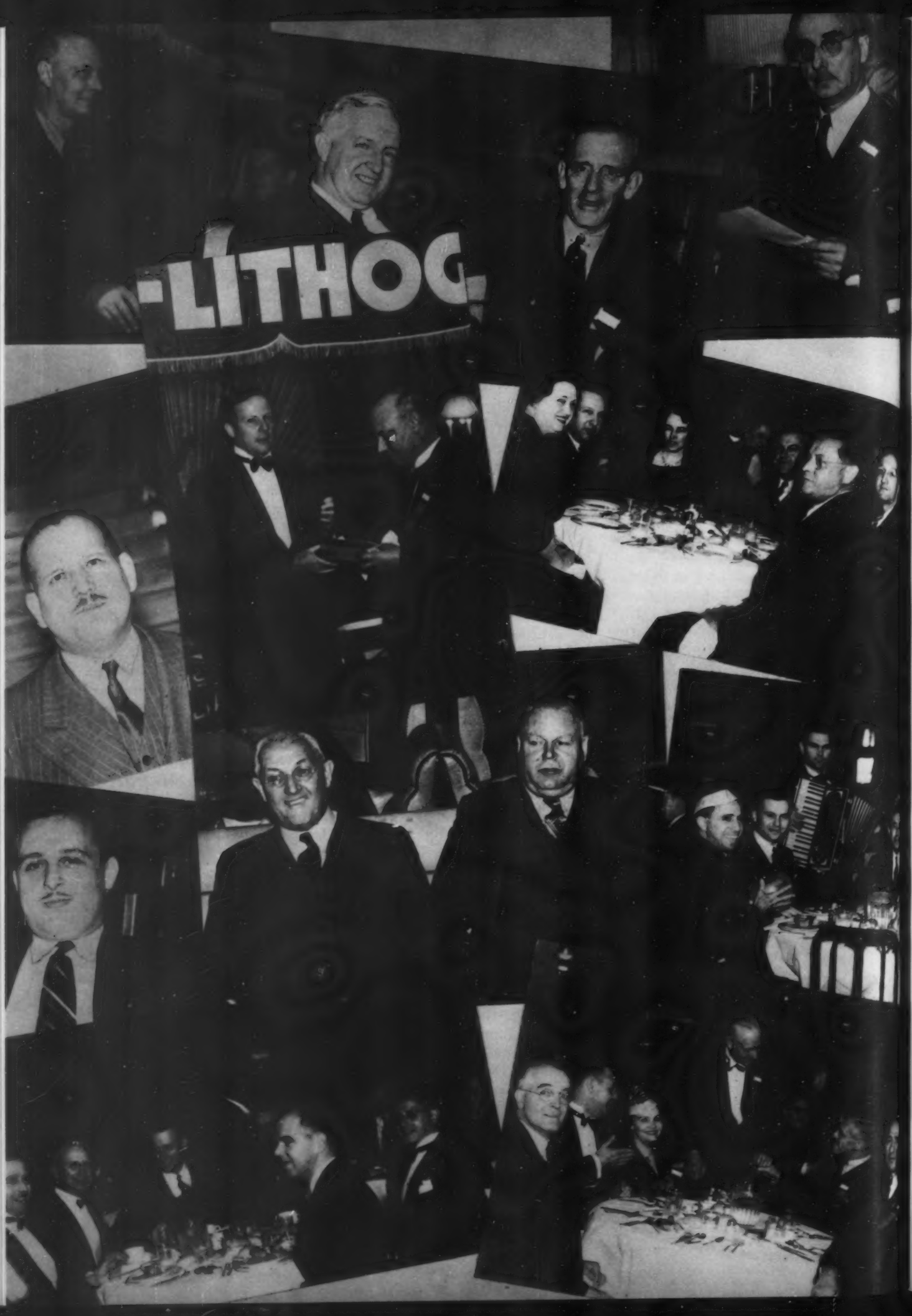
The high point of the convention's social program was the annual banquet and dance held in the hotel ballroom Friday night. It was a gala night. A delicious dinner, favors in the form of noise-makers, balloons and funny hats, an accordion player who wandered from table to table playing requests, and a radio soloist from station WJSV, all added to the holiday spirit of the banquet and dance. It was at the banquet that Merle Schaff, on behalf of the association, presented President Paul Heideke with a gold watch.

The final day of the convention on Saturday began with a special breakfast meeting for lithographers producing special products. The technical discussions were resumed with Major Wallace W. Kirby presiding. The first speaker was F. R. McCrumb, chemist of the W. A. Taylor Co., of Baltimore, who spoke on "pH Control" and gave a demonstration of its use. Mr. McCrumb's paper is published in this issue. The interest created by his talk was evidence again of the new spirit of investigation and research present throughout the convention. Following the talk on pH, a symposium discussion on technical production problems was held, led by Joe Machell, Stecher-Traung Litho Co., Rochester, N. Y., Harvey Glover, Sweeney Litho Co., Belleville, N. J., Summerfield Eney, Champion Paper and Fibre Co., Hamilton O., and W. N. Misuraca, National Can Co., New York. Some of the subjects discussed were blanket washes, roller setting, the care of rollers, dampening materials, materials used in graining, masking methods in the preparation of a negative, developing solutions, offset papers, moisture of papers, and moisture of inks.

In his talk Mr. Machell, speaking from the practical standpoint of an experienced practical pressman, advocated standardization of methods in the pressroom. In the setting of rollers, for example, he said that it should be standard practice for the pressman to set his rollers and for the foreman to check him. In the interests of smoother operation, he also emphasized the need for standardization of blanket washes. Because he followed a standard procedure in his plant he pointed out that he was now able to get 1,000,000 to 2,500,000 impressions out of a blanket, without embossing whereas it used to be around 200,000. The usage time had also been extended to 5 to 6 months. As for the cause of the blanket embossing, he said it was due to over packing.

For cleaning rollers, Mr. Machell suggested 4 ounces of a 10 per cent solution of caustic potash in 16 ounces of water be used and a swabber.

In his discussion of offset papers Mr. Eney debunked the notion that there is any such thing as "pre-conditioned" paper, which is sold to the printer apparently to meet any type of condition. Pre-conditioned for what and for whom? he asked. He said that any preconditioning must be done in the same room in which it is printed, not at the mill where conditions similar to those at the


-LITHOG

printers very probably do not apply. He pointed out that it was unwise for the printer to keep paper in the plant too long before it was used. In running offset paper, it must always be run with the grain long, otherwise there will be undulations in the paper, he warned.

THE Saturday noon luncheon was held in the Dragon Room of the hotel, where H. A. Hopf, management engineer, New York, spoke on "Management in a Changing World." Mr. Hopf, who was awarded the gold medal for outstanding service rendered in the cause of management at the convention of the International Committee for Scientific Management held at Washington recently, told the meeting that with the lack of security existing in the world today, and the quality of risks present in the business world due to the changed relationship between government and business, higher taxes, and the smaller profits which have been the result, the need for more intelligent management was essential for survival. He pointed out that increasing competition was making it much more difficult for a business to earn a profit, unless stringent and rigid management policies were adopted. He said that it was futile to lament what may seem like the almost intolerable conditions which business is facing today, since it was like polishing brass on a sinking ship. The present attitude should be, instead, a receptivity to new ideas, and adaptability in a changing world. He pointed out that business too much of the time was looking for new worlds to conquer when it might well try to liquidate the gains it had already made.

After the luncheon on Saturday, technical discussions were resumed until 4 o'clock in the afternoon, at which time the convention was officially ended. Election of officers had been held

(*Turn to page 50*)

Before the Convention Camera

Not all the remarkable speeches, exhibitions, comments and catastrophes at the recent convention were confined to the meeting room. Roaming thru the corridors, cadging free drinks in the cocktail lounge and listening at keyholes, our wandering reporter picked up a lot of informative although sometimes libelous dope.

. . .

There was the famous case of the missing glasses, for instance, rivaling that other epic which involves the identity of the gent who put the overalls in Mrs. Murphy's chowder. Well, who done it? We mean who pinched Farnsworth's glasses. It's getting to be a fine state of affairs when a gent can't retire to the privacy of a barber shop to catch a quick nap without having someone walk off with his bifocals and leave behind an old-fashioned stereoptican. Bring them back! Your identity is known!

. . .

Is there a doctor in the house? No, we don't mean Doc Meloy, because we saw the room that wasn't his. Next year we are going to ask that every room Doc Meloy is *not* occupying be so labeled.

. . .

Paul Heideke did a grand job of making the pre-convention arrangements and seeing that the meeting sessions ran off on schedule. He was first to arrive and one of the last to leave. When he did leave, we are informed by our agents that he went right home and went to bed, which is what we are going to do when this epic account is completed. Come to think of it, besides going to bed we are going to lock the door and hide the key.

. . .

Another busy little bee at the convention was Walter Soderstrom who developed a Demspey crouch and a great bobbing and weaving defense after tangling with the first six exhibitors who didn't like the position of their booths. When we locate the first exhibitor at some Utopian business show, who admits that he is thoroughly satisfied with position, size, lighting, service, etc., at his booth, we are going to have him stuffed and mounted in the Smithsonian Institute.

. . .

It's a boy at the Howard Colehower, Jrs.! And who are the Colehowers? Well, did you see that big, smiling, genial fellow at the Godfrey Roller booth? That was Mr. Colehower, former all Eastern football tackle for the University of Penn. On the eve of the Convention his father-in-law, William P. Squibb, head of Godfrey Roller, sat in our room and heard the news come over the wire that he was a grandfather for the second time. It was a boy, born Oct. 6.

. . .

Boy meets girl all over again at the Convention! And there is a little "Happy" in this meeting, too. Walter Soderstrom says he will be godfather, while Summerfield Eney—well, all he does is laugh at Walter.

. . .

Champion story teller at the convention, by common consent, was Lee Rosenstadt of Ardlee. Bill Kane was a close runner-up, but could not quite make up in the length of his stories the advantage that Lee had on him in quality.

. . .

Champion voice holder in the singing contest was not either Tony Math of S and V or Ray Collins of Mathias. After both of these big barrel-chested birds had completely given out of wind a little skinny pigeon-

(*Turn to page 49*)

Highlighting the EXHIBITS

THE splendid cooperation of the companies listed below through their respective exhibits at the Sixth Annual Convention of the N. A. P. L. has won the acclaim of lithographers who attended the sessions. In brief form, necessitated by space limitations, THE PHOTO-LITHOGRAPHER reviews the exhibits, listing wherever possible the names of each company's representatives in attendance.

AGFA ANSCO CORPORATION

Karl H. Foesten
I. Thorner
F. Soennecken

Considerable interest was manifested in the large colorful exhibit consisting of a series of color cut-outs shown through the courtesy of Einson-Freeman Co., Long Island City, N. Y. Other features were a series of attractive half-tones on Reprolith Ortho Films and enlargements on Brovira Paper.

R. P. ANDREWS CO.

George Kennedy

This well known Washington paper merchant displayed many outstanding lithographed specimens produced on mill brand papers manufactured by companies such as Appleton Paper Co., W. C. Hamilton & Sons, Hammermill Paper Co., Rising Paper Co., West Virginia Pulp & Paper Co. and others.

RUSSELL ERNEST BAUM

R. E. Baum

A wide variety of lithographed and printed specimens illustrated the versatility of the new suction-fed Quintuplet Baum folding machine, displayed on the floor, and designed especially for small folding of direct mail literature, package inserts, etc.

INTERNATIONAL PRINTING INK CORPORATION

George Welp
John F. McQuade
L. J. Peters

Many of the latest developments in litho and tin decorating inks, also in lithographic supplies, were featured in the IPI exhibit; emphasizing the complete service available to the industry.

KELLOGG COMPRESSOR & MFG. CORP.

J. F. Weller

Actual demonstration of the Kellogg Automatic Controlled Tray Cooler stressed the importance of keeping solution trays within 2° of desired temperature, permitting uniform temperature for uniform finishing results.

GELB MFG. CO.

Joseph Gelb
Herbert Gelb

A striking display of printing and arc lamps focusing attention on the "hot spot" eliminator feature of the Gelb line called forth considerable attention from visitors at the booth.

FUCHS & LANG MFG. CO., DIVISION GENERAL PRINTING INK CORP.

John Devine
J. Allan Belvin
William O'Hara
E. J. Halligan
Louis Tamb

Outstanding specimens of lithographed work produced with Fuchs & Lang inks were attractively displayed in the exhibit hall, supplemented by an additional private display.

GODFREY ROLLER COMPANY

William P. Squibb
H. H. Colehower
C. Walker Jones

This well known manufacturer of rollers displayed for the first time "Aquatex" which is claimed by its makers to be the new, improved seamless tubing for lithographic and offset dampening rollers, thereby permitting an even distribution of water.

HAMMER DRY PLATE & FILM CO.

M. E. Jones
William Kelley
C. W. Curtis

In addition to their many well known products, there was exhibited for the first time commercial process and soft gradation panchromatic plates for color separation, also available on film.

HARRIS-SEYBOLD-POTTER CO.

Alfred Stull Harris
Harry A. Porter
Vernon R. Mitchell
J. V. Valiant
William D. Wood
Frank England

A complete showing of chemicals recently introduced to the industry featuring "Harris Deep Etch Process" and "Harris Surface Plate Process" were supplemented by practical demonstrations under supervision of the company's representatives.

PHILLIP A. HUNT CO.

Jack J. Spring
Frank O. Casseboom

A complete showing of this company's line of photographic chemicals for the lithographer was complemented by the distribution of Hunt's latest price list.

LANSTON MONOTYPE MACHINE CO.

Fred W. C. French
Joseph Costello

Practical demonstrations of the "Monotype-Huebner Photo-Imposing System." Equipment included M-H Adjustable Layout and Register Table, M-H Register Chase and the M-H All-Metal Registering Vacuum Frame with lamps and pump.

The demonstrations stressed all operations involved in operating this system with the single exception of finally exposing the plate. A layout shown on the Layout Table, which registers negatives in position on acetate film stretched over the M-H Register Chase, transferring the chase from the Register Table to the Vacuum Printing Frame and apply frame.

HAMILTON MFG. CO.

Oswald A. Olsen

The Hamilton Light-Aliner line-up and register table simplifies all work, such as layout of forms, paste-up of copy preliminary to photographing. It is claimed by the manufacturer that Light-Aliner eliminates squares and measuring instruments.

MACBETH ARC LAMP CO.

James Coutts
William Brown
Irdell Eachus

Featured in this exhibit of printing and arc lamps was the new Macbeth Mercury Arc for printing and projection work.

at the N.A.P.L. CONVENTION

C. F. PEASE CO.

J. R. Schwab
Carl E. Capman
Frederick W. Bensing

A complete battery of Heli-o-Lite white flame, open arc lamps, available in both printing and camera types, featured the attractive display of Pease equipment for the industry.

HAROLD M. PITMAN CO.

Kenneth W. Martin
Kenneth Sloan
H. B. Latimer

Displayed was the Pitman Flashing Lamp, the modern method of flashing half-tone negatives; Newick Diaphragm Control for producing consistently good negatives with minimum attention on part of operator. Other equipment on exhibit was the Pitman Cabinet Type Printing Frame and the Pitman Film Cabinet for storing of films.

R. R. ROBERTSON

Considerable attention was focused on the Robertson Temperature Control Unit for controlling the temperature of developer. The Robertson Etching Machine, designed for etching large plates of thin metal, was also on display at the booth.

RUTHERFORD MACHINERY CO., DIV. GENERAL PRINTING INK CORP.

A. F. Herman
William Recht
E. G. Schreibeis
W. A. Burns

One of the highlights of the display in their private room was the Rutherford Photo-Lettering Machine.

SINCLAIR & VALENTINE CO.

Anthony J. Math
Arthur J. Mahnken
Fred C. Wikoff

An outstanding display of lithographed specimens, consisting of direct mail, poster and die-cut pieces produced with Sinclair & Valentine inks elicited considerable comment from the many who stopped at the attractive display.

WEBENDORFER-WILLS CO., INC.

John B. Webendorfer
Albert Eaton
John Farnsworth

The Webendorfer Simplematic Offset Press displayed under actual working conditions brought forth considerable praise from the many visitors at the booth.

RALPH C. COXHEAD CORP.

G. J. Farmer

The practical use of interchangeable type and automatic margin justification on the improved Vari-Typer photo-composing machine received much attention from those who witnessed the actual operation of the Vari-Typer, recommended by the manufacturer as ideal for photo-composition work. Available to the booth visitors was a copy of the latest type book issued by the company, showing more than fifty of the most popular type faces available, besides a variety of many modern foreign language fonts.

CRAFTINT MFG. CO.

Jack H. Berwitt
Morton H. Strasburger

Unusual half-tone and Benday shad ing effects (in line), with a stroke of the artist's brush, highlighted the showing of Doubletone drawing paper, which is claimed to cut the cost of illustrations in half through the application of Craftint developing fluids on Doubletone.

DAYTON RUBBER MFG. CO.

W. P. Tuck

Against a background of murals depicting scenes at the Dayton factory were displayed, in racks, sets of Dayco litho rollers. Complete information on the application of Dayco rollers to every condition of the press room were made available to interested callers at the exhibit.

DUFAYCOLOR, INC.

Robert Jordan
Marc Statler
Paul Lamboit

Tastefully designed with proofs of transparencies in lithographed, engraved and gravured form, the Dufaycolor booth elicited considerable from many of its visitors. Also exhibited was the Curtis-Dufay separation negative maker, an instrument enabling operators to turn out balanced grainless continuous tone negatives from transparencies.

E. I. DUPONT DE NEMOURS & CO., INC.

Allan F. Clark

A specially constructed illuminated display illustrated the increasing use of Neoprene in the making of lithograph and printing rollers. Stability at high speeds and superior resistance to ink vehicles and washing solutions are listed among the many claims made for Neoprene rollers.

EASTMAN KODAK CO.

John McMaster
Alexander Clair
W. N. Rutherford

Presented for the first time to the industry were many striking examples of Kodachrome in size 5 x 7 inches. It is claimed by this exhibitor that the new size, which has been in demand since the miniature size was first put on the market, has opened up a new field for color reproduction work. A number of striking illustrations were also displayed, made from 35 mm. Kodachrome by several well known lithographic plants.

MALLINCKRODT CHEMICAL WORKS

Jack Kelt

A full line of dry plate photographic chemicals, also two types of collodion for wet plate work were featured in the Mallinckrodt exhibit. Available to visitors was the latest catalogue recently issued for the industry, also samples of a new type of purified gum arabic.

MERCK & CO., INC.

P. H. Staub
J. E. Matthews

A feature of the Merck display was a presentation of a ruler listing the chemicals available for the industry. The Merck graphic arts catalogue was also distributed to visitors who manifested considerable interest in the complete line of chemicals displayed in the at tractively designed exhibit.

The exhibitors were no mean contributors to the "Share Your Knowledge" theme of the convention. In addition to personal demonstrations and talks by attendants, considerable descriptive literature was distributed. It is possible that there are some who might have missed some of the literature, mislaid it, or would like additional copies. THE PHOTO-LITHOGRAPHER will be very glad to furnish copies of any of the literature distributed by exhibitors, on request.

The *LABOR* Problem

in the Lithographic Industry

by Benjamin M. Robinson*

The problem of labor in the lithographic industry may be divided into two parts: first, the simple question of recognition of the union organization in your field by employing lithographers; secondly, the difficulties you must face arising from the jurisdictional dispute between the lithographic union and the printing unions over the offset press, and from the fact that you are an industry within a larger industry, the graphic arts.

Let us quickly dispose of the first. Legislation in the past few years now makes it unnecessary to argue for the legality of collective bargaining. This doesn't mean that large groups of you won't evade the law at the drop of a hat, because you will. But I wasn't assigned the job of selling you on the economic desirability of collective bargaining, and union organization of your employees. I personally believe in genuine union recognition, and not mere lip service to the law. You, in this industry, have the good fortune of having one union, reliable, respectable and honorable. You should take advantage of this fact.

Neither management nor labor has a monopoly of either brains or stupidity. Of course, the union has pulled "boners" and will continue to do so. But what employer has never done wrong! Of course, the union may often disagree with you on things to be done, or things not to be done. If it always agrees, then either you or the union is a bad representative. You are representing opposite sides. There must necessarily be differences of opinion and judgment; but there is always ground for reasonable compromise. If a forced recession from your position turns you into a confirmed union-hater; if conferring with a union delegate spoils your digestion; if seeing your men independent in the knowledge that they have honest, intelligent leaders to deal for them, makes you a confirmed neurotic, then gentlemen, you had best quickly retire to where you may dream of an economic order which has passed from existence. Unfortunately, there are still many employers who regard today as a mere bad dream —it will pass, they say, simply hold tight and don't yield. To these gentlemen, honest and industrious, I offer my regrets.

It is my opinion that under the law and by reason of sound economic policy, your recognition of the lithographic union should be unhesitating. You have much to gain from unionization. The experience of our Industrial Relations Committee, for example, proved that one of your greatest protections against destructive price-cutting was a standard wage scale.

The lithographic industry is a part of the larger graphic arts industry. Its problems—in sales, manufacturing and labor—are closely related to the other competitive processes. You must view your industry in the light of the whole, and this is particularly true of the labor situation.

The anomaly of an industry within an industry poses immediately a basic question in this day of centralized action. Does the lithographic process, producing some $225,000,000 worth of goods yearly, really constitute an independent industry? If it is so set up today, should it be? If it is not so set up, should it be? To this date, at least, lithography has been and is an autonomous industry. It has its own employer associations, and the Lithographers National Association is now celebrating its 50th anniversary. It has its own trade publications. It has its own trade union, dating back at least 50 years. It had its own Code Authority.

Should it so continue? Shall it so continue? The ultimate answers to these queries will be determined both by you and the other employers within the industry, together with technological and commercial developments generally in the graphic arts. Frankly; the actions of employers show that they have a decided distaste for answering or even considering them. But you will have to answer these questions whether you wish to or not.

Within the graphic arts, there are six printing unions and one lithographic union. The printing unions are craft unions. Your lithographic union is an industrial union. Five of the printing unions combine into an Allied Printing Trades Council, the chief function of which is to sponsor and promote the Allied Printing Trades label. The litho-

* Before 6th annual convention National Association of Photo-Lithographers, Washington, October 7, 1938.

graphic union is outside of this Council and has its own union label. It is not a part of the Allied Council, because the Council won't take it into the group.

The Graphic Arts Unions

All of your graphic arts unions, including the lithographic union, belong to the American Federation of Labor. Prior to the death of Charles Howard, you had an anomalous situation arising from the position Mr. Howard held as Secretary of the C. I. O. and also as president of the International Typographical Union, which was still affiliated with the American Federation of Labor. Today, that link between the C. I. O. and the graphic arts is gone. Do not assume from this, however, that there will not be any future connection.

Most of you are undoubtedly aware of the long pending jurisdictional dispute between the lithographic union on the one hand and the printing pressmen and photo-engravers on the other hand. If I can read the signs correctly, this jurisdictional dispute will at a very early date come to rest on your doorsteps. For this reason, I think it advisable to tell you of this dispute, as I see it, in quite some detail. I don't want you to fail to recognize your own baby.

During the time when the lithographic industry consisted of flat bed and rotary presses and did not seriously interfere with printing jobs, neither the printing pressmen nor the photo-engravers evidenced any real interest in you. The lithographic industry, comparatively speaking, was only a small piece of the graphic arts pie. When the industry began to grow and the offset press came into existence, the printing pressmen were smart enough to realize that here was a potential threat to their efforts to control all the presses in the graphic arts. Therefore, back in 1912, they tried to teach some printing pressmen at the Printers Home the art of operating an offset lithographic press.

The lithographic union protested to the American Federation of Labor in 1913 that the printing pressmen were invading the organizational field which properly belonged to the lithographic union. The lithographers claimed simply that the offset press was a lithographic press. The A. F. of L. appointed a committee to study the matter, and received a committee recommendation in 1915 that jurisdiction of the offset press should belong to the printing pressmen and that plate making for this press should be under control of the photo-engravers. It is interesting to note at this late date that one of this committee of three was a barber, one a plumber and one the head of the New York State Federation of Labor. Not one of them was a printer or lithographer.

From that time until the present date, the printing pressmen and the photo-engravers have claimed jurisdiction of the offset press and of offset plate making, respectively, while in fact the lithographic union has at all times maintained control of organized workmen in the lithographic field. The steady substitution of offset presses for flatbeds and rotaries was under lithographic workers. Lithographic pressmen and lithographic plate makers ran the presses and made the plates. I think it is common knowledge that at no time could the printing pressmen or the photo-engravers supply men even if lithographic employers would deal with them.

The steady increase in offset press installations and the favorable increase in work going to lithographic firms in the past ten years brought the matter to a head. In the spring of 1938, the Executive Council of the American Federation of Labor ratified the action of prior conventions in awarding the offset press to the printing pressmen and offset plate making to the photo-engravers. At the end of some 25 years of conflict, however, the printing pressmen and photo-engravers are still without jurisdiction in fact, because they can't supply skilled lithographic workmen.

Results of the Dispute

The printing unions have devoted considerable time and efforts to promote their printing label against the lithographic label. Their actions have taken several main paths. First, they have sought municipal and state legislation favoring the Allied label and discriminating against the lithographic label. The lithographic industry has been successful thus far in opposing these actions. In New York, they have persuaded Governor Lehman twice in the past two years to veto legislation requiring the Allied label on all printed material bought by the state. Last year, the employers and the union combined in an action and enjoined the City of New York from discriminating against the lithographic label. In this action, in which I acted as counsel, the Court said:

> "The Amalgamated Lithographers of America so far as the record here discloses, is a *bona fide* recognized labor union. . . . There is nothing to cast doubt on its *bona fides* as a union or on the effectiveness of its activities in behalf of its members. Under such circumstances the city has no right to insist upon the label of the Allied Printing Trades Council, whose members are engaged in letterpress printing, in preference to the label of the Amalgamated Lithographers of America, whose members are engaged in lithographic printing. In the competition between these two types of printing—lithographic and letterpress—the city cannot under the guise of selecting the label of the union in one exclude the other."

Second, they have sought to turn business from lithographers to printers on the ground that the lithographic label was not a true union label. Both forms of action by the printing union are increasing, and will continue to increase.

In January of this year, the Executive Council of the A. F.

of L. disapproved the use of a union label by the lithographic union and at the same time recognized the label of the Allied Printing Trades unions as the only *bona fide* union label in connection with all forms of printing, including offset. On March 15th of this year, President William Green of the A. F. of L. sent out a letter calling this action of the Council to the attention of all of its affiliated unions. Thereupon, the printing unions began an aggressive campaign to turn lithographic work to letterpress printers. They circularized buyers of lithographed products to advise them that such products bearing the lithographic label would not be deemed union products and to advise them that all union graphic arts products must bear the Allied label. Union lithographic plants today can only produce with the lithographic label. Therefore, the action of the printers is against lithographic products.

Buyers of graphic arts products are not familiar with the intricacies of this jurisdictional dispute and of course, the printing unions neglect to state that the lithographic label is an illegal label only in the eyes of the A. F. of L. The validity of a union label depends upon the integrity of the union issuing it. It does not depend upon the approval of any labor body. The lithographic label is registered in the various states. It has been in use for more than a quarter century. It has been approved in every court action in which its validity has been tested and it is today accepted generally throughout the country. On the other hand, there is no doubt that the campaign of the printers is causing difficulties today and will cause increasing difficulties. The printing unions have a total membership many times the number of lithographic employees.

It will not do for lithographic employers to say "we are not concerned because we do not produce material with the lithographic label"; or to say "we are not concerned because we do not have a union lithographic shop." The problem is one for the lithographic industry as a whole. Let these employers know that if union lithographic shops lose their customers who require a union label that they will not permit their presses to remain idle but will become another part of lithographic press capacity seeking any kind of work which can be produced on these presses. Let these employers, together with all employers, recognize that the autonomy of the lithographic industry is being questioned. Is the lithographic industry an autonomous industry or is it only a part of the entire graphic arts? I do not believe that this industry can long remain autonomous in the full sense of the word if its employees are organized within the printing unions.

The Employer in the Middle

UNFORTUNATELY you are faced with a troublesome problem which you cannot avoid. Unfortunately also, this is one of those instances in which the employer, fair or unfair, as labor may think him to be, is right in the middle. Jurisdictional fights always have unfortunate results. But so, too, do price cutting fights between employers have unfortunate results for the employees. An organized industry means cooperative action in a defense as well as in promotion of the industry.

So long as it is feasible within the industrial growth of your industry to remain autonomous you will want to do so. Your problems are not printing problems. Printers are not lithographers. You have your own technical schools, your own trade associations, your own problems and your own methods in handling them. It is only natural for you to feel then that it is best for you and for your customers that lithographers deal with lithographic workers and that lithographic companies solve their own problems.

In the very nature of things, you are competitive with printing and increasingly so. You are also numerically much weaker than printing plants. We would not be realistic if we did not admit that fair trade or labor decisions by a graphic arts group would follow what is best for the majority, and the majority would be letterpress printers.

There is no simple answer to this problem. The matter is in itself complicated. Then, too, the peculiar set-ups in different localities makes the problem take different turns. In one it is purely the union label. In another it may be the boycotting of products using lithography. In still another, it may be an inter-union struggle for control of the workers. The fact that there is no clear-cut answer to these problems, however, does not require you to ignore them.

You must seriously consider your problem in its various phases. That calls for joint discussions and joint action. That means close cooperation with each other and with the lithographic union, where advisable.

You must take an active part in any local movement which seeks to uphold the lithographic industry and the lithographic label.

If you operate a mixed plant, with both lithographic and letter press equipment, my suggestion is that the two parts of your organization be separated physically as far as possible.

Like all other matters, this will find a solution and you will still be doing business whatever the solution may be; but your frank observations and discussions today will help you tomorrow. You may not be able to avoid the situation entirely as some of the forces at play are beyond your control, but you will learn how to ease the impact of unpleasant conflict.

How Do You Pay *Your* SALES STAFF?

By John W. Rollman*

Intelligencer Printing Co., Lancaster, Pa.

The prime consideration in the selection of a plan for compensating salesmen of lithographic products is that the selected plan be mutually beneficial. Please notice that I mention the words "mutually beneficial" because they are so very important. No plan can succeed unless both parties—in this case the employer and salesmen—reciprocate. In considering the various plans to be outlined let us try to keep this thought foremost.

About a year and a half ago I was charged with the responsibility of employing several salesmen and, naturally, some method of compensation had to be adopted. About the only plans of which I had any knowledge were the straight salary and straight commission plans. However, after spending some time in searching for information and ideas on the subject, I discovered that some of our leading salesmen's and graphic arts' publications had compiled some very useful data. In one investigation the practices of nearly a hundred various industries were reviewed and thirteen different plans of compensation were noted:

24 paid straight commission
25—commission and salary
14—straight salary
7—salary, commission and expenses
7—commission and drawing account
3—salary and bonus

3—salary, drawing account and commission
2—commission with drawing account
2—salary and expenses
1—commission and expenses
1—salary, expenses and profit sharing
1—a percentage of gross profit and drawing account
1—fifty-fifty, salary and commission

The straight commission and the salary and commission plans are of course the most widely used, not because they are necessarily the best for the salesmen and the house, but merely because they are the most simple to operate and are the plans about which we know the most. Then, too, depression conditions have made it necessary for many business firms to change from straight salary to salary and commission or just straight commission.

One large lithographer used to pay straight commission monthly and sent a weekly drawing, account check. This he had to discontinue and is now advancing his salesmen a small amount of money—just enough to carry them along to pay expenses—but he is not sending weekly checks to their homes. He says they are now working on the principle that they believe in—value received—so that a salesman must earn money before they pay him. Others are paying commissions on work in process, giving the salesman at least part of his commission before the work is completed. In considering the advantages and disadvantages of a few of the plans, we find the following:

The straight commission plan based upon volume protects only the house. It does not give the salesmen a definite income and surely no ease of mind with which to plan intelligent selling. It does encourage an effort for volume, but in disregard of profit for the house. The salesman is interested in meeting competition and selling volume, but not in building accounts.

If he receives a commission only on jobs that show a profit, he becomes critical of the production department and often blames them for inefficiency and the cause of his losing his commission. He might even suggest substituting cheaper materials in disregard of the interests of the customer. Proper cooperation be-

* Before 6th annual convention, National Association of Photo-Lithographers, Washington, October 7, 1938.

tween the plant and salesmen is difficult in a plan of this kind.

When a commission is paid only upon minimum price orders, with a bonus for selling above the minimum, the salesman is encouraged to seek the lowest possible price from the estimator and sell the job above what is considered a fair price. This eventually causes the customer to lose confidence in the house. Here again the salesman is more interested in making his bonus than in helping the house hold its accounts.

THE STRAIGHT SALARY PLAN is ideal during prosperous times because it gives the house complete control over the salesmen. However, the salesman is very often prone to be satisfied and to lack the constant urge to fight for business at a profit. He is interested mostly in keeping up his volume to justify his salary and not in profits for the house. To encourage this type of salesman to sell at a profit a bonus can be paid, based on a share of the profits after his sales reach a certain volume and a profit is shown on the whole.

In one plant the sales are averaged over a three-months period. If they are above the quota and a profit is shown, the salesmen receive bonus checks. The percentage of profit to be paid depends entirely upon what the house can afford and upon how much encouragement they desire to instil into their salesmen. In some cases the percentage has amounted to as much as twenty-five per cent and in others, as little as three per cent. In this plan there are no complications or complaints from the salesmen so far as salary is concerned, provided the work shows a profit. However, when there is a loss, very often disputes arise between the salesmen and the production department. The salesman feels that he has been penalized for the inefficiency of the plant staff.

A novel plan has been suggested to the printing industry by Mr. Oliver Wroughton, secretary of the Graphic Arts organization of Kansas City, Missouri. His plan should work equally as well for photo-lithographers. It suggests paying the salesmen ten per cent of the cost of work sold, or eight per cent of the selling price, plus twenty-five per cent of the profit or margin over cost, shown by an accurate job summary. This method will give the salesman some advantage, especially when his salary is based on ten per cent of the cost and some of the jobs fail to show a profit even if costs are in excess of the selling price. His efforts, however, should still be directed towards selling work at a profit, because his twenty-five per cent share of the profit is greater than ten per cent of that share on the cost which should be profit, unless your estimating or costs are extremely out of line.

The suggested plan minimizes disputes between the salesmen and the production departments and penalizes the salesmen less than the house when the jobs fail to show a profit. Accurate costs and production records are a great aid in settling any disputes that might arise. The percentages of commission mentioned herein can be adjusted to fit various classes of work and can be increased or decreased as conditions demand. Small orders need greater percentages than do the larger ones. The principle involved is that salesmen's compensation should be based partly upon volume sold and partly in proportion to profits earned.

During the question and answer period following Mr. Rollman's discussion some interesting facts were disclosed. One question asked was: "What percentage of commission should the salesman receive on the amount of the paper used on a job where the mark-up on the paper is only five per cent?" Mr. Rollman said he did not have any information on a plan wherein a separate commission was paid for paper or miscellaneous purchases and another on labor. He further stated that in his experience, which covered over twenty-five years in the printing business, he discovered that the printing, lithographic and photo-lithographic industries were paper finishing businesses and that if a substantial profit was not realized on the paper, ink, outside binding and other miscellaneous purchases, it would be very difficult for a plant to show any profit at all. Depending on the uncertainty of labor operations for a profit would, indeed, be a great risk, but not so on paper and the miscellaneous purchases, he said. And added, "We know what they cost and we surely are entitled to a just

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In order to afford a perspective view of this method of compensating salesmen, let us suppose that salesmen are employed upon a basis of fixing salary upon 10 per cent of the cost of the printing sold, plus 25 per cent of the margin as shown by the job summary records.

Price	Cost	Profit	Salary	Salesman's Share	Salesman's Income	House Margin
$1,000	$ 800	$200	$80	$50	$130	$150
1,000	900	100	90	25	115	75
1,000	1,000	None	100	None	100	None
1,000	1,100	None	110	None	110	Loss

Now let us suppose the same analysis of salesmen employed on the basis of a salary of 8 per cent of sales plus 25 per cent of the margin.

Price	Cost	Profit	Salary	Salesman's Share	Salesman's Income	House Margin
$1,000	$ 800	$200	$80	$50	$130	$150
1,000	900	100	80	25	105	75
1,000	1,000	None	80	None	80	None
1,000	1,100	None	80	None	80	Loss

Lithography in the United States

By Richard Roley

Fifty years ago this October Grover Cleveland's first term as President of the United States was drawing to a close. The Government of that day was concerned with a problem which no longer distresses our Federal officials: the problem of how to spend an obstinately mounting surplus in the annual accounts of the U. S. Treasury! By the end of the fiscal year, June 30, 1888, a surplus of $103,000,000 had accrued. Said Cleveland: "The fact that our revenues are in excess of the actual needs of the Government justifies a reduction in the amount exacted from the people for its support."

That ought to be a fairly swift indication of how long ago it was that the Lithographers National Association was founded! Thus, as this month, on Oct. 5 to be exact, marks the fiftieth anniversary of the association, it is a time for congratulation, and also, perhaps, of remembering. One cannot but be impressed with the changes that have taken place since the fifth day of October, 1888. When Julius Bein, the first president of the association, delivered his initial address there were approximately 260 lithographing establishments distributed throughout the country, operating between 1100 and 1200 steam lithographic presses. In 1888 there were still Indians in the West that had not yet been subdued; above 59th Street in New York there were great stretches of rocky land, unoccupied save by squatters in huts; there were no subways, and the elevated trains ran by steam; the newest wonder of the world was the Brooklyn Bridge; the linotype machine was only five years old; John L. Sullivan was champion of the ring; there wasn't a golf course in all America. Lithography, discovered in 1796, was 92 years old, but still very young.

At the banquet for which the "rollers" shown here served as menu and program, speakers included Frank Gehring, Joseph R. Keogh, Wm. F. Long, and John B. Muir, all of New York.

Still to come were the rotary press, the offset process, the improvements in rubber which have permitted the use of rough finish paper, the development of the photo-composing machine, the deep-etched plate,—the later refinements which have contributed toward building up an industry which does an annual business of over $150,000,000. It must not be assumed, however, that only since these later developments has lithography been recognized as an important process in the United States. Interest in lithography in the United States dates back to the early years of the last century.

The honor of producing the two earliest lithographs in the United States, according to Weitenkampf, belongs to Bass Otis of Philadelphia in 1819, though, he adds, the *National Intelligencer* reports that a Dr. Mitchell, also of Philadelphia, had a lithographic stone with ink in his possession as early as 1808, and a lithographed illustration was produced for the *Analectic Magazine* in Boston in 1816. "These first expressions of a new art," Weitenkampf comments, "had little to recommend them, artistically speaking."

Nevertheless, interest in the new method of reproduction must have developed rather rapidly, for in 1826, it is reported, a silver medal was awarded by the Franklin Institute to a Robert Peale for his copy on stone of his own portrait of Washington. Dr. D. J. MacDonald, educational director of the Lithographic Technical Foundation in New York, in an article published in a German publication, quotes a remark made by Robert Peale at the time which indicates the enthusiasm with which artists received the new art: "I was among the first of the artists," says Peale, "employing this admirable method of multiplying drawings. In 1826 I went to Boston and devoted myself for some time to lithographic studies, executing a number of portraits and other subjects and finally a large drawing of my own portrait of Washington."

Other lithographs of the same period were Robertson's Grand

BO MOHAMMED OF STUKA

Lithographed by

Onken's Lithographing Co., Cincinnati

All early American lithographs shown on these pages were furnished through the courtesy of Fuchs & Lang, New York

TENNANAH TRIBE-MAN AND WOMAN

Lithographed by

A. Hoen & Co., Baltimore

When Things are at the
Worst, They Must Mend

A horse and carriage running swift away,
Much mischief once created.
Poor Pompey's wooden leg in ruins lay--
His dog was decaudated!

But Spaulding's Glue--
O, more than happy thought
Makes all such fractures stronger,
It cured the leg to make a long tale short
And made the short tale longer!

GRANDPAPA'S PET

Drawn and Lithotinted by John H. Richard expressly for Miss Leslie's Magazine, the first specimen of this art ever produced in the United States.

Lithograph of P. S. Duval, Philadelphia

...al Celebration, produced in ...35 in New York, and Tilton's Jacob Perkins, produced in Boston and lithographed by Pendleton, in 1826. As a result of these works, the commercial importance of the new process quickly came to be recognized. Subsequent records show an increase in the production of lithographic printing both in Boston and New York. Indeed, during the next quarter-century, 1825 to 1850, the "grease crayon" movement, as it was known, was taken up by scores of artists.

One of the early plants of the Forbes Lithograph Manufacturing Co. in Boston

ACCORDING to Weitenkampf, the earliest drawings showed a predominantly French influence, both in subject matter and technique. In the employ of Imbert's, of New York, at the time were names like Duponchel, Bancou, Canova, Duval. Many companies were importing French artists and technicians to take charge of their lithographic departments.

As is shown by the majority of lithographic works extant in public libraries and private collections from that day, lithographic artists prior to 1860 to 1870 devoted themselves chiefly to portraiture and topographical subjects. Representative lithographs of this early period were brought together and published in album form first by N. Currier from 1838 to 1862, and were republished with additions some years later by Currier & Ives, New York. Naturally, these lithographs appear crude and inadequate when compared with modern lithographs.

Color printing in some form must have been practiced by lithographic artists and lithographers almost from the first. However, the first real evidence of any degree of success in the use of color appeared in 1845 on the cover page of *The Waif*, a publication edited by the poet Longfellow. Four years later, in 1849, Max Rosenthal, in Philadelphia, made the chromo-lithographic plates for what is believed to be the first book in the United States fully illustrated by this process. It was a book that lent itself especially well to color, under the title, *Wild Scenes and Wild Hunters*. At the time, according to the National Census of 1850, there were only eleven lithographing companies in the United States, employing 162 employees.

Beginning at about this time, with the improvement in mechanical equipment, the interest of the artist in the lithographic process began to wane. Lithography was gradually becoming an industry, a means of earning a livelihood rather than a means or artistic expression. Although Weitenkampf, as Dr. MacDonald has pointed out in his article, has written that a high degree of interest by the artist existed as late as 1870, when the *Album of American Artists* was issued by Prang & Co., this must be reconciled, he says, with the fact that the editor of a leading art journal of the time vainly endeavored to revive the fast-waning interest of artists in lithography.

Mechanical improvements, however, up to that time had not been great. The first practical development had been the process of transferring duplicate copies of the artist's drawing upon the stone, thus enabling the hand pressman to utilize the full capacity of the largest stone then available. Quantity production was made possible to the extent of 200 to 250 sheets a day on hand presses. Then came the power press in 1865, which increased the speed of printing to as high as 600 per hour. But there is little doubt, according to Dr. MacDonald, "that mechanical improvements, —the substitution of steam for hand-power presses, the displacement of flat-bed by direct rotary presses (1903–1915), and these in turn by offset presses (1910–1930), and the substitution of photo-mechanical for hand transferring methods, in short, the commercializing of lithographic printing, contributed heavily to the loss of interest on the part of artists in lithography."

Nonetheless, hand methods were only slowly displaced by the machine in the lithographic industry. It was in 1907 that William Huebner invented and built the first photo-composing machine in the United States, and successfully composed the first half-tone color subject. A durability test conducted three years later yielded 24,000 im-

pressions from this type of plate. However, according to Dr. MacDonald, photo-composing machines were not readily accepted by lithographers. He states that except for Goes Lithographing Co., in Chicago, and Rolph-Clark-Stone in Toronto, who installed machines in 1914 and 1915, respectively, relatively few additional installations took place during the next decade. "It is reasonable to assume," he says, "that the unsatisfactory results secured by users of albumin plates had an important bearing upon the situation."

WHATEVER such lack of development may have been due to, hand transferring methods generally prevailed throughout the industry up to 1925 or later, he says. "Since that time, however," he continues, "due in part to improved lenses, in part to better photographic plates and films, in part, probably to a considerable degree, to the deep-etched plate, and in part to the discovery of controls which make longer runs and more even quality possible, the substitution of machine for hand transfer methods proceeded much more rapidly. With the development of new low-priced but adequate photo-mechanical equipment, hand transfer methods, while they will still play a part, will play an increasingly minor one."

That, briefly sketched, is the story of lithography in the United States since the first lithograph of record was produced. There are of necessity countless omissions. It does not take into account the part that organized lithography has played in shaping the industry. That the association has been a force is evidenced by the fact that it is today celebrating fifty years of growth. There were many times when it could have disbanded, many times when it nearly did. Sectional quarrels, jealousies, disputes over person-

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Young* Lithographers Congratulate Oldsters

By JOHN L. KRONENBERG

President, Young Lithographers Association*

THE Young* Lithographers Association salutes the Lithographers National Association on the occasion of its fiftieth anniversary as an active trade association. It is fitting that the newest of all organizations in the lithographic industry should pay tribute to the oldest—to an association which since its inception in October, 1888, has continuously served the lithographic industry. A quick glance at the history of the industry in the United States reveals how accurate was L. N. A. founder Julius Bien when he opined, "Greater progress is possible, and no better means to this end can be found than in the close association of those who are engaged in the various branches of our profession. The advantages in its better conduct through the interchange of the experiences of the members cannot be over-estimated, and must accrue to the benefit of the entire trade."

Though this statement was not familiar to the lithographers who organized the Young* Lithographers Association in October, 1937, the words might well have served as a preamble to the constitution which they drew up, so aptly does this nineteenth century speech express their twentieth century ideals. Just as in 1888 employing lithographers joined together for their mutual benefit, so 49 years later did the younger men in the industry. This time it was not the owners of plants, but their sons, their executives, their salesmen and their technicians who united in a spontaneous effort to broaden themselves, to learn of the problems of the industry, to understand their competitors and to better prepare themselves for the future.

Independently conceived, organized and operated though it is, the Young* Lithographers Association supplements the unselfish work of the L. N. A. and other graphic arts trade associations in building a stronger and more aggressive industry adjusted to the requirements of modern business. Specifically, the new organization provides a forum (1) for the consideration of particular problems under the guidance of appropriate experts, (2) for the interchange of industry information about production, sales and management, (3) to develop and strengthen the personal relationships between individual members of the industry, (4) to understand and consider from an industry standpoint the executive problems which must in time be faced by at least certain of its members, and (5) generally to maintain and promote the high ideals of the lithographic industry.

In a word, the purpose of the association is educational. Its goal is members who are attuned to present needs, adaptable to future needs and equipped to fulfil them. This goal, as reached, means inevitably a stronger, more stable and steadily progressing industry.

And so, as the Young* Lithographers Association embarks on its second year, it offers the Lithographers National Association its sincere felicitations as the latter commences its second half-century.

* Does not refer to age.

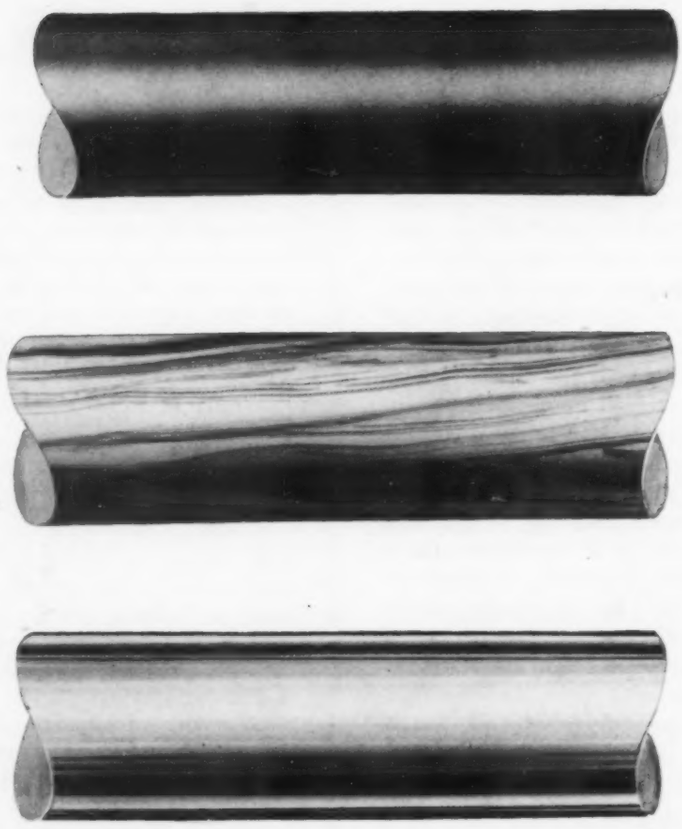
LIGHT and SHADE

A continuation of the discussion on practical retouching and offset photograph preparation

By Jacob Stein

Stein Studios, New York

Practical retouching is simply the art or process of coordinating the utilitarian and functional elements of the subject in the photograph, whether it is a printing press, a pump, an automobile, an electric iron or a piece of wood, with eye appeal. For example, you have undoubtedly seen photographs of automobiles in the lower-price field which have been retouched so that they look like luxurious, swank, expensive models. The retouching was not done deliberately to deceive or mislead, but to coax prospective buyers, through eye appeal, into romanticizing about how fine it would be to own an automobile, especially the model shown. A basic appeal to prospective purchasers is pride of possession. An attractive, retouched photograph of a product awakens and stimulates that pride. Hence retouching plays a very important part in advertisement illustration.



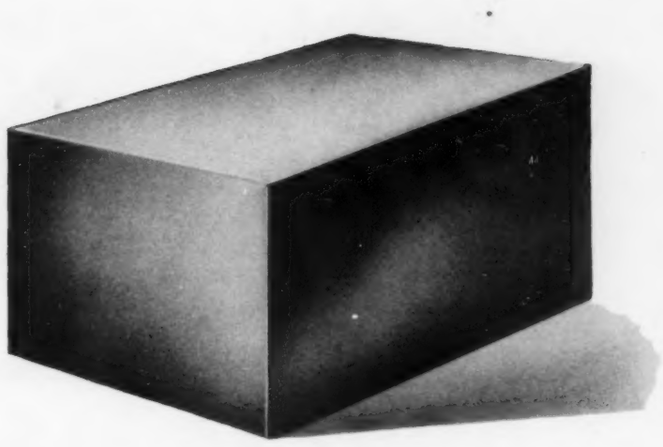
For rubber or iron, as illustrated at the top, spray dull black and keep the highlights above the center. For wood, as shown in the illustration in the middle, all grain should be drawn with an air brush. It should be sprayed slightly lighter than rubber material before graining is applied. For steel or chrome, as shown in the bottom illustration, keep the highlights above center of the subject.

Attractive retouching is accomplished by highlighting and shading the photograph at the proper places. Yet, in our opinion so little understood are the principles of highlighting and shading that their full potentialities are seldom realized. It is a selective process. Meager knowledge of how to use light and shade is responsible for much poorly executed and sloppy work in present-day catalogs. There must be an understanding of why some surfaces must be darkened to show depth, and other areas lighted so as to stand out prominently. It is very important, therefore, that a careful study of the photograph be made before beginning the actual retouching. For example if there are brass parts on the subject, the proper highlighting of these must be taken into account. If

the subject is equipped with rubber cables or tubes, just how to retouch these so that they can be identified must be understood. Wood parts that might show, and iron and steel areas, chrome fittings, all must be considered separately for retouching. They must be retouched to resemble as perfectly and ideally as possible what they actually are so as to show the machine or product to its best advantage.

Brass surfaces should be retouched smooth and soft, then sprayed to give a dull lustre. All large surfaces are sprayed with the airbrush, while small areas are painted by hand. A dark gray No. 4 color is used for spraying rubber tubes, insulation, cables, mountings, etc. Rubber surfaces must have a soft appearance, and for this all tones of gray are used. A white highlight is never used since rubber does not reflect highlights. All wood surfaces must show the grain, even though the photographer did not catch it in his picture. A flat surface of medium gray No. 2 or No. 3 is used for this purpose, and the grain is drawn in, using a No. 4 or No. 5 gray, which will give a woody surface.

On iron and steel an airbrush and a medium gray No. 3 is used, with the steel surfaces retouched so as to reflect somewhat more light than the iron. Where iron casings on a machine are to be shown, it is best to blow out all of the surrounding iron and steel areas and treat the casings with a brush by hand. Chrome surfaces should always look very shiny. A No. 1 gray background and good black and white will produce a good effect of brightness. The first thing, though, is to study carefully the different planes and surfaces before any work is begun, treating the light as though it were projected from the upper left hand corner. All parts that protrude must be painted lighter, the further out the lighter, while all parts beneath ledges and in corners should be shaded. Throughout the retouching the vision of a light projecting from the upper left hand corner must be borne in mind.



This shows the correct light and shade for a box or container. All light should be seen as coming from the upper left hand corner.

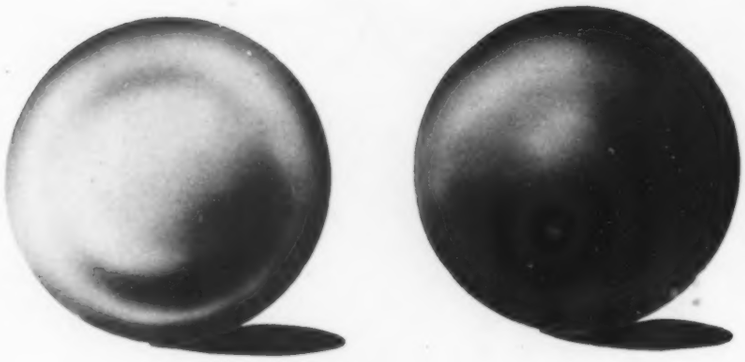
When retouching round surfaces, follow the curve with the shadows. Of course, care must be taken that shadows are not put in impossible places and highlights where they do not belong. Retouching cannot be rushed. Only careful deliberation and study as the job proceeds will assure best results. The moment a straight line is placed on a curved surface, for instance, the subject loses all shape and character. A few preliminary self-taught lessons on light and shadow will be helpful. By drawing an apple and placing shadows on the left hand side and highlights on the right side it will be readily seen whether or not the shading and lighting was properly done by the shape of the apple.

Oftentimes retouchers are confused by the color of an object and its shadow. By careful observation the difference between the color of an object and the shadows produced on it by the action of light on its surface can be detected. The essential thing is to retain the illustration's photographic identity, otherwise the true value of the photograph is artificially destroyed. It is advisable, if possible, to have the photograph a little larger than reproduction size if much retouching is necessary in order to do a more accurate job.

An important point that the retoucher should consider before he begins the job is the method by which the retouched photograph is to be reproduced. If it is to be re-photographed, expert accuracy in detail, and the blending and matching of colors is required. If it is to be reproduced by offset printing, the more contrast that can be obtained in the lighting and shading, while still retaining photographic identity, the better.

Also, photographs differ widely in subject matter. Some have been planned and photographed for dramatic appeal, others for decorative appeal, still others to illustrate practical advantages and improvements of one product over another. Some photographs, also, call for a retouching job that will emphasize only a small part of a piece of equipment. The subject of the picture and the style of composition determine the extent to which shading and lighting can serve to make the photograph more attractive.

Most of the subjects on which the practical retoucher is called in consist of plain photographs



A steel ball and an iron ball. Note the effect of roundness and brilliancy of the steel ball, and the darker shading of the iron ball to give the suggestion of dullness.

of products or equipment to be sold. The obvious function of light and shade, then, is to achieve complete visibility of the subject in an attractive manner. In the past few years, however, with newer developments in photographic technique there has been a tendency on the part of some advertisers to experiment with a more dramatic style of presentation.. You are perhaps familiar with the routine. The subject is bathed in the glare of a powerful spotlight. Deep, mourning-black shadows are flung across the foreground and a long exaggerated shadow of the product looms, like a specter, in the background. Recently we saw a box of table salt photographed in this fashion. Whether such treatment is effective or not, we are not in a position to say. Maybe it is for some types of products. Cosmetics and luxury products might lend themselves to it. The point is that such cases of exaggerated lighting do not properly come within the scope of the practical retoucher. Their purpose is to show only certain features of a product, while the function of the practical retoucher is to show the product in all its aspects.

Acquires New Hohlweiniana

A. R. McCandlish, president, McCandlish Lithograph Corp., Philadelphia, recently announced that he had acquired a number of new additions to his collection of Ludwig Hohlwein poster designs. Included are original sketch layouts by Hohlwein, illustrating his technique. A showing of the complete Hohlwein collection will be held at the Pennsylvania Museum School of Industrial Art in the near future, then it is to be made available to art museums, universities and other galleries throughout the country. Requests are now being received for permission to display the collection.

Richard Kelly Dies

Richard Kelly, 69, former president of R. Hoe Co., New York, manufacturers of printing machinery, died last month. Mr. Kelly was a native of Ontario, Canada. He entered the employ of the company in 1885 as secretary to Robert Hoe, 3d, then president. He became president, general manager and chairman of the board in 1920, retiring in 1925.

Announce Printing Exhibition

The fourth Annual Printing Exhibition of New York City, sponsored by the New York Employing Printers Association will be held Oct. 31, Nov. first, and second at the Hotel Astor, New York. The exhibition will display samples of commercial printing, including posters, book jackets, letterheads, case bound books, printing on tin or cellophane, etc., along with case histories, explaining the purpose and production features of each piece. The title of the exhibition is "More Printing for Better Business." It is designed to be of practical value to the users of printing by demonstrating how printing develops and maintains business. Tickets of admission to the exhibition may be obtained from the N. Y. Employing Printers Association, 461 Eighth Ave.

Rapid Roller Expands Plant

Rapid Roller Co., Chicago, has recently announced the completion of a new addition to its plant at Federal and 26th Streets, bringing the total floor space to 65,000 square feet. Rapid Roller Co. manufactures offset blankets and composition rollers as well as the "Mercury Roller" for inking and dampening, and the "Ebonite Roller" used to replace steel rollers. David M. Rapport is president of the company.

Lithography in U. S.

(*from page 35*)

nel questions, contributions, etc., were all problems which it had to face. Neither has this sketchy history touched upon the personalities and characters of the individuals who have been a part of the history of lithography. The artists, the inventors, the plant owners, the salesmen, the chemists, those in research, etc.,—they belong in the picture. A part of such a story should also trace the influence that advertising and merchandising have played in the growth of lithography. There are many other phases of its history that need to be told. Maybe someday they can be. Meantime, it will be no small task to report in these pages the history of lithography as it is being made every day.

Announcing

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THE PUBLISHERS

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The Development of the PHOTO-COMPOSING Machine

By William C. Huebner

Although the photo-composing machine did not become a part of the lithographic process until 1906, nonetheless no account of the history of lithography in the United States would be complete without calling attention to the very important contribution its introduction made to the art. The man who invented the first photo-composing machine was William C. Huebner, who certainly should be well qualified to tell us something about its beginnings.

[The Editor.]

It was in 1906, eighteen years after the founding in 1888 of the Lithographers National Association, whose fiftieth anniversary we are celebrating this month, that the first composing machine for placing original images at predetermined locations on a large lithographic stone or metal press-plate, was introduced to the lithographing industry. At the time, a few lithographic firms had adopted metal plate-printing by means of the direct rotary press to speed up production. Although the presses were sheet-fed by hand, the output was greater than by the flat-bed lithographic stone press, and greater output was the objective sought.

Many lithographic firms, however, were slow to adopt the direct rotary metal plate lithographic press because it was felt that the best color work in lithography had to be printed from lithographic stones. At the time, chromo lithography and the better grades of color-printing required from eight to sixteen printings. On the smaller sizes of work, stipple artists made up the color plates. On the larger sizes, lithographic crayon work was used. Photo-lithography had been tried, but with little improvement resulting in the general methods of lithographic production. After the half-tone screen was used successfully by photo-engravers doing three and four color process work, occasionally a lithographic house would attempt to put down a half-tone on polished lithographic stones, but these first attempts were confined to the black or drawing plate only.

Such were the practices, methods and state of development in the industry previous to the introduction of photo-composing in 1906. The writer had worked in the art and designing departments of a number of lithographic plants from the period 1893 to 1904, and had had ample opportunity to become grounded in all of the practical phases of the industry. He had also served an apprenticeship in photo-engraving shops in the three years 1904–1906. As a result of this training and the recorded observations accompanying it, the conviction was strong that lithography would never produce high grade color work in about four printings to compete with copper plate printing unless the hand transfer method was changed and means were found to correct the color separation negatives to render a commercially presentable reproduction of color copy. It was this conviction that brought about the first photo-composing machine.

The year 1906, then, saw the beginning of the new art of photo-composing. Development has been continuous and intensive since that time. That the new developments have been helpful in expanding the field of color lithographic printing is evidenced by the fact that today few, if any, lithographic plants are operating under the methods used before 1906.

It was in 1907 that the first three-color half-tone reproduction was printed from photo-composed images from a stone 34 inches by 44 inches on a flat bed press. This was done at Courier Lithographing Co., in Buffalo. Previous to this two photo-composing machines had been built by the writer and scrapped. The third machine was much more successful and produced satisfactory results. This three-color half-tone subject printed from lithographic stone was the first and only subject printed in that manner, because it was apparent that large lithographic stones were too heavy to be handled conveniently. Hence, attention was concentrated on the use of metal plates, and on the necessary accessory equipment needed to produce satisfactory commer-

cial color work. At the end of six years, the first successful commercial equipment was built and installed. It was installed at Stone, Ltd., in Toronto.

The six years, 1906 to 1912, saw the introduction of darkroom cameras, large horizontal coating machines to coat larger size press plates, sensitizing solutions, developing inks, and the beginning of many of the methods we use today, with the exception of the deep-etch plate. That came later. During this period were also developed the indirect process of color correction, dot etching, and offset composing machines.

The offset press in 1906 was one of the major contributions of the period. The application of photo mechanical plate making equipment to the offset press enhanced the quality of work turned out, resulting in printing that was far superior to that produced by old lithographic methods. Stone, Ltd., Toronto, Goes Lithographing Co., in Chicago, Niagara Lithographing Co., Buffalo, American Lithographing Co., New York, Forbes Lithographing Co., Boston, and Magill-Weinsheimer Co., Chicago, constituted the group of pioneers who produced the first printing from photo-composed offset press plates.

Japanese lithographers, traditionally advanced in printing methods, at about this time also saw the possibilities of reproducing color by the new photo-composing system. They quickly discarded the printing of twelve and sixteen colors by the old lithographic process as obsolete, and adopted the newer process. Toppan Printing Co., in that country, and HB Co. of Japan were the first to introduce it. Soon the use of photo-mechanical equipment and the offset press spread into general use. Photography and the offset press have gone hand in hand in building up the lithographic industry to the present-day status.

THE following divisions of the present-day overhead camera, will give an idea of the features that have been developed and can be utilized by the industry in connection with camera work to step up production, obtain precision in the various steps highly essential to color process work now, and in the future.

1. Overhead resilient suspension and overhead three-point suspension.
2. Screen holders for moving screens to the left or right side to clear the image area for combination line and screen work.
3. Mask system for multiple images and combination image work.
4. Oscillating copyboard for line-up and centering copy.
5. Vertical and horizontal adjustment of copyboard, glass plate holder and diffuser attachment.
6. Overhead camera with vertical copyboard, also horizontal copyboard for prism work and glass tilting copyboard attachment.
7. Overhead camera with vertical copyboard for direct work also vertical copyboard for prism work.
8. Overhead camera with darkroom enlargement attachment.
9. Portable vacuum back attachment for film, paper and glass.
10. Laterally swinging carrier frames for visual register for composed image positions.
11. Photo-electric exposure controller for precision exposures.
12. Precision focus system to predetermined image size and setting.

In the use of photo-composing machines for placing original images in exact register on press plates, the following features have been incorporated to meet present day and future requirements. It will give the reader an idea of the many details which enter into successful performance in modern color offset printing.

1. Notch bar register system for speedshifts to precision register to inch thousandths.
2. Two-way adjustment monorail for simple operation.
3. Any size vacuum non-embossing negative holder to suit any job requirement.
4. Four-way head image placement for quick and convenient layout requirements.
5. Tilting negative for quick and convenient readjustment of masks for deep-etch and layout requirements.
6. Negative holder overlapping plate edge, vacuum seal for selective combination image placement.
7. Precision placement of sensitized plates, mechanical and vacuum systems.
8. Visibility of print surface. Operators can see entire plate surface by means of light hood system.
9. Accessibility to sensitized plate and all operating parts.
10. Vacuum holder for sensitized glass plates for repeat and combination group positives with foot control for vacuum pressure.

Other devices such as photo-imposing systems, automatic timing devices, cylinder making equipments, new direct projecting methods for large size work, color measuring and value control systems to reduce retouching time and errors have been developed and are ready for application to help the industry advance to meet competition by other printing processes in the future. Whatever methods of plate or cylinder making are to be used in the future by changing processes, the offset industry and its workers constitute a force which will continue to adopt newer methods and expand their usefulness to the public in general, and to the user of printing in particular.

Are You a PEDDLER or a SALESMAN?

By Maurice Saunders

Chairman of the Board of Directors of the L.N.A.

Since this month marks the 50th anniversary of the founding of the Lithographers National Association, we thought it would be pertinent to ask a member of that group what he considered, in the long perspective of a half-century of organized lithography, to be among the important questions facing the industry today. Mr. Saunders, former executive director of the L. N. A. and present Chairman of the Board of Directors, seemed to be the logical person to tell us. This article which, of course, necessarily represents his own personal views, was the result. [*The Editor*]

Well, are you a peddler? Or a salesman? Which? If you are in the lithograph business you can be either without much difficulty. We have known a lot of peddlers in our day and we have known many salesmen. We are not going to name them because we desire to retain such friends as we have acquired over a long term of years.

We have known men who got their business by getting the buyer drunk and getting his name on the dotted line when he was incapable of writing it without spiritual guidance. Some of the orders stuck. Most of them were the subject of controversy and future trouble and usually involved the loss of a customer.

We are acquainted with the slickers who could write a tricky contract which an important executive would sign without knowing what it meant. Bankruptcies and suicide resulted from court judgments declaring the contract to be legal and requiring the bill be paid.

We have known the boys who could buy their business. There was a time when some of the minor executives, purchasing agents and even partners in a business were not above accepting substantial sums of money or diamond necklaces for their wives as a consideration for placing orders. This is more or less outlawed today in spite of the fact that there are still large sums spent for Christmas gifts for some important buyers. Perhaps the time will come when Henry Ford's policy of not permitting employees to accept gifts "not so much as one thin dime cigar" as one man puts it, will prevail. Business ought to be placed on that basis.

Then, of course, there is the man who represents five or six concerns at one time, with a drawing account from each of them. We once heard of a swell girl demonstrator of cosmetics who was on the payroll of nine cosmetic manufacturers at the same time. Not so bad?

So long as there are human-beings there will be slickers, but that's not the way for a salesman to build business. The men who are really doing a good job are those who are conscientious about their responsibility not only to their employers but to their customers. No lasting business can be built up on overloading a customer with advertising material or selling him something that is frivolous where a serious effort is required. Too few salesmen and no peddlers really make a genuine effort to learn what they should know about the products for which they try to produce advertising material. There are men who do a swell job of investigation and produce material which fits into an advertiser's program and gets results. True, it calls for work and nowadays there is too much effort to avoid work on the part of too many men representing lithographers in the field. We said "representing," which isn't quite correct, because some of these men are on the payroll of really estimable houses and do not represent the house.

In this respect the employer is responsible and fails to realize that the man on his payroll who calls on his customers is probably the only man connected with his company that the customer ever sees. Whatever impression the customer gets regarding his establishment he gains from this representative, be he a peddler or a salesman. Many an account has switched because the salesman had gone sour and no other contact has ever been established. The buyer had never been visited by "the boss." Get out on the firing line with the boys. They will profit by it and customers will "be glad to meet you."

We have run into many representatives of lithographic estab-

(*Turn to page 50*)

a BLACK you'll be proud of!

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WHEN a job printed with ECLIPSE Black comes off the press, it is a pleasure to all concerned because of the deep, rich density and remarkable uniformity of this famous black.

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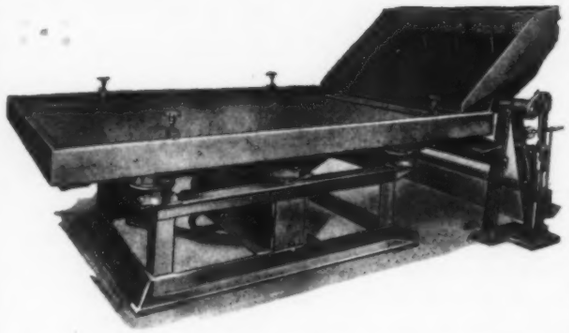

Showing automatic dumping device which saves time and eliminates kinking of plates when removed.

L.N.A. 1888 1938

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Tiffany *and* Woolworth. . .

both offer quality products in their own fields. Lithography, too, can be above or below the quality par quite independent of the price range at which it sells. The true test of quality in lithographic work, says **Walter Soderstrom,** is ability to get desired results.

REAMS of copy have been published on the subject of quality. Lots of it has been just so much balderdash, and full of generalities that could inspire—or lead astray—only a novice in any field.

Let's forget, if we can, all that has been written along such lines. Then we should be able to get down to a bit of fundamental thinking on the subject of quality in the photo-lithographic field—some ways in which high quality can be achieved, and why it is desirable if only from the standpoint of increased profits and greater stability.

Among other definitions Webster says that quality is "any character or characteristic which may render an object good or bad, commendable or reprehensible." That definition is not explicit enough to serve our purpose, mainly because being good or bad is not an absolute condition. To illustrate, a photo-lithographed job may be "good" in the sense that it accomplishes certain desired results under one set of circumstances, and it may be "bad" under another set of circumstances.

Another Webster definition, "Power to accomplish; capability of doing a specific thing—" is the one that describes quality as it can be applied most aptly to photo-lithographic products.

Some photo-lithographed jobs quite justly can be considered to be of poor quality even though they seem to accomplish the purposes for which they were intended. For instance, the office form for internal use and meant to last only through a short period may be of good quality even if it is lithographed on inexpensive paper and trimmed without too great regard for precise margins because it seems to serve efficiently a specific purpose. But if it shows evidence of slipshod work in the way of ink so greyish that the type matter is hard to read, of typesetting containing occasional incorrectly spelled and divided words, then it deserves to be called a product of poor quality. In ways such as those just mentioned, which are not such obvious faults, it will hamper the efficiency of those who have to use it.

Quality in the commonly used, loose sense, may be an attribute of many jobs of photo-lithography, but in the more precise meaning of the word it may be altogether lacking. As an example, keeping in mind Webster's definition, "Power to accomplish—a specific thing," the internal office form used for records of only temporary usefulness that is lithographed on a bond paper containing a high percentage of rag does not represent high quality as far as the paper is concerned. It represents useless waste. But if the form embodies in the arrangements of its blank spaces and directions for use means whereby clearer records can be made with the expenditure of less time, there we have elements of high quality in relation to a specific job to be done.

Many instances could be cited of photo-lithographic jobs that are erroneously considered to be of high quality simply because of the use of expensive papers, more colors than are necessary to do a specific job efficiently, the use of hand-set foundry type when linotype would do just as well, etc.

Expensive parts do not, necessarily, make up a high quality whole! Pearls in spinach are more likely to mean broken molars and *poor* spinach than a novel way to wealth! So it is with the photo-lithographed job. All parts must be properly and sensibly correlated as to grade, functional suitability, etc., to result in a job that will get the desired results—that can truthfully be called a job of high quality.

Nothing in the foregoing should be construed as a brief for "poor quality" as that term is commonly used. It is meant to define more accurately high quality as ability or power to accomplish specific results. Successful development of the subject is premised on clear understanding of the real meaning of this sadly misused word. It would do little or no good to discuss quality unless there is this meeting of minds as to just what is meant by the word, or should be meant by it, when applied to photo-lithographic work.

The further development of this subject of the benefits to be derived by those photo-lithographers who have set themselves

to the job of building reputations for high quality is premised on the fact that very few of us are actuated totally by esthetic motives.

Some of us have hardly any pride in the work we turn out; it is satisfying to us if it results in a profit. Others of us nicely balance the motives of pride in the accomplishment of a meritorious job with the making of a reasonable profit. A very few put pride of accomplishing something meritorious above the profit motive; these are the ones who, the world being what it is, are way down at the heels in one way and up in the clouds in another!

The photo-lithographers in the second classification, who combine the desire and capability to do fine work with the business ability to make it yield a profit, are the ones who represent the largest and most stable element in the lithographic field, as in every other industrial field.

Following are some reasons why all lithographers should strive to be included in the second classification, with a few suggestions as to how they can accomplish this desired result.

Does a Quality Reputation Pay?

ALMOST every lithographer, whether he admits it or not, envies his fellow-lithographer who has established a reputation for high quality work. He, too, would like to have his product known as a high quality product. We need not waste any words establishing that point.

The photo-lithographer who is known as a planographer because he specializes in black and white work, the bulk of which may consist of combination runs, has just as good a chance to build his reputation for quality work (in the precise meaning of the word) as the photo-lithographer who specializes in color work and elaborate sales promotion material.

The very nature of the combination run business means that there must be, now and then, some compromise between specifications that should be followed exactly in order to do a certain job in the best way and the limitations imposed by the method. For example, as most combination runs are made on 20 lb. sulfite bond, the job that really needs a heavier or better paper must be justified in enough compensating ways if run on the lighter and cheaper bond, otherwise no saving in price can make up for the loss of effectiveness or, within the spirit of Webster's definition, of high quality. With this limitation in mind, let us consider ways and means whereby the planographer can do work which will bring him the desired reputation for being a lithographer of high quality.

COPY PREPARATION—First, there's a great opportunity in copy and layout service to help build a reputation for high quality.

Some lithographers look askance at any activities not directly concerned with mechanical production, and they consider completely prepared copy, practically ready for camera, as representing the only kind of business worth having. It is becoming more and more evident, however, that lithographers who maintain copy preparation services are the ones who will get the cream of the business.

As combination prices are fixed by each plant, subject to increase only when extraordinary demands for delivery, etc., are made, copy preparation services afford excellent opportunities to include an extra item in the billing and one which is not readily subject to comparison with the prices that would have been charged by any other photo-lithographer, or by someone outside of the industry, such as the artist or the advertising man.

The kind of copy preparation service that will not only add to profits, but will also help to build up a reputation for high quality work, need not mean the maintenance of a staff of high salaried people. In many cases one combination copy and layout man, with plenty of ingenuity and a solid sense of advertising values, is quite enough to form the nucleus of an efficient copy and layout service department.

The very nature of the offset process encourages the use of stock or reprint illustrations in jobs done in combination. When cleverly handled and used only in places where they are appropriate to the subject, they help to enliven the job. But care must be taken not to overdo such use. Altogether aside from any implications of plagiarism, their overuse or misuse is likely to cheapen the job and give it an obvious appearance of being the product of paste pot and scissors.

The clever and versatile copy service man can help your customers to avoid such weaknesses and to make up copy of high quality—because most "capable of doing a specific thing."

CAREFUL PAPER SELECTION.—Competition limits the price that can be paid for paper suitable for combination work but even within a limited price range careful investigation will reveal some papers that are much better than others, both for the customer and the lithographer.

It need not be a matter of a blue-white or a cream-white sheet; that is largely a matter of individual preference. But investigation will disclose inexpensive sulfite papers that lay much flatter than others because more thoroughly seasoned; that are freer from blemishes; that have more compact surfaces. The careful selection of the stock for combination runs can have a lot to do with the building up of a reputation for high quality.

OTHER OPPORTUNITIES.—The use of a better quality ink, the more accurate placing of units to assure proper margins, neat packaging, delivery on time—these are some of the things that can be done by the planographer

within the province of profitable production to help him establish a name for work of the highest quality.

You might say, "What has delivery on time got to do with high quality as you define it—?" Well, it has a powerful lot to do with it. It gives the customer the value of what the economists call *place utility*—being *where* it should be *when* it should be so that it will be most "capable of doing a specific thing."

Improving the Job

It is impossible in this article for us to suggest or discuss all of the many ways in which lithographers can "up" the quality of their product without, necessarily, entailing a proportionate increase in cost. Citation of just a few of the ways in which lithographers of color work and sales promotion material can increase the quality of their product with extra satisfaction to their customers and more profit to themselves are in order. Space limitations preclude the inclusion of suggestions other than very general ones.

In this kind of lithography, even more so than in planographic work, an efficiently conducted copy and layout service department represents one of the best ways to establish a reputation for quality work. This is based on my belief that for every one buyer who knows exactly what he wants in the way of format, copy and layout, there are five who know next to nothing about sales promotion through advertising. They have only an urge to "get something out." These people are the ones who will be willing to pay well for suggestions as to the proper vehicles to carry their message (shall it be a brochure, a booklet, a counter display, or a combination of two or more of these?), of copy to tell their story most effectively, and of layout that will do justice to the copy.

All of these things contribute, just as importantly as well done mechanical work and carefully chosen materials, to the lithographic products that can be correctly considered ones of high quality.

"Creative" Salesmen.—Like the word "quality," "creative" has been flagrantly misused for so long that we hesitate to employ it. But even if it is in some ways a misnomer, it will serve to express in brief one of the attributes of the salesman who is to be of the most help to himself and to his house in building a name for quality.

More explicitly, we have in mind the type of salesman who has a thorough knowledge of the fundamentals of good copy and good layout, together with an ability to detach himself enough from the immediate profit motive so that he can advise his customers as to the kind of lithographed product *most capable of doing a specific job.*

The type of salesman will discourage the use of three colors if two are enough to accomplish the purpose. He will discourage use of a format of arbitrary size, wasteful of paper and mechanical facilities, if one selected from the wide variety of standard sizes will do the job just as well. He will dissuade the proud 25th Anniversary book prospect from lavish use of silver paper and silver stamping if he honestly believes that a less ornate book, depending on first-class copy for its "color" rather than on the hackneyed use of expensive stock and stamping, will do just as good and probably a better job.

In the long run this type of salesman will cash in on his far-sighted policy of selling the kind of lithographed product most able to accomplish a specific purpose, regardless of its cost. His customers can be made to realize that in the lithographic business, as in all other businesses, the *real* cost of any job is not an isolated sum judged in relation to what may have been paid before, or what has been quoted by a competing lithographer; instead, it is made up of the amount paid for the job *related to the returns.*

Use of Good Materials.—Another very important characteristic of the lithographer who is out to make a name for himself as a quality lithographer is his determination to accept no order except as the price quoted permits use of materials adequate to do the job in the most effective way. Every lithographer has on his list of customers and prospects a certain type who plays one lithographer against another, gradually getting price down to the point where either inferior materials and workmanship must be used, or profit forfeited. Better to cross off your list this type of buyer. Otherwise he will be one of the factors that will keep you from joining the ranks of the quality lithographers because he will remember the low quality long after the low price is forgotten—and will tell others about it!

High Quality Brings Rewards

We have discussed a few ways, in general, in which high quality work can be done. It has been established by the foregoing, too, that high quality does not necessarily mean high price. Now let us set down some of the benefits that are enjoyed by the lithographer who has established a reputation for high quality work. For, as we mentioned in the forepart of this article, it is a foregone conclusion that none of us is in business for esthetic reasons. The combination of satisfaction in work well done with a reasonable profit is necessary to justify the continuance of any lithographic establishment. The profit motive must be satisfied!

The lithographer who has built up a name for high quality benefits in two ways: 1) in competition with other lithographers; 2) in competition with printers who use other processes. Let us look into some of these benefits.

(*Turn to page 79*)

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New York Photo-Lithographers Elect A. J. Fay President

A. J. Fay, National Process Co., New York, was elected president of the New York Photo-Lithographers Association at a meeting held in New York last month. Other officers named for the year 1938–39 were Victor Friedman, Clifton Graphic Co., New York, vice president; H. Leslie Ward, Gray Photo Offset Corp., New York, treasurer; and Walter Soderstrom, New York, executive secretary.

The retiring president, John Beith Smith, Jr., Photo Reproduction Corp., New York, reported on the activities of the association for the year 1937–1938. Said Mr. Smith, in part: "The very attitude of willingness to meet and discuss common problems in a spirit of cooperation and good-will has proved a powerful antidote for apprehension. Trade associations proceed by education rather than by compulsion, as a means of eliminating the destructiveness of cut-throat competition. When we come together at meetings to discourage dishonest and deceptive dealings, misrepresentations and unfair trade practices, we are making efforts to solve the problem of how to sell at a profit."

Mr. Smith then went on to enumerate specific advantages of trade associations. One of the more important aspects, he said, was the social side of the meetings. "History or chance may have made us competitors," he said, "but good will can make us friends." He then spoke of the exchange of credit information among members, pointing out that it represented a type of service which should be continued, and of the activity of the association office in assisting members and skilled mechanical help in securing placements. Other services which the association rendered during the past year as outlined by Mr. Smith were: Information to members about labor contracts and legislation; attempt at regulation of unfair trade competition; and initiation of a plan whereby members can now secure insurance on lenses and screens.

In closing, Mr. Smith said: "With the Federal Government and State agencies, together with organized labor, setting up forms of legislation and demands which will vitally affect every plant in the country during this next year, it is the sincere conviction of your President that this association should begin to strengthen its position by:

"1. Increasing its membership so that it will be a truly representative organization in this area.

"2. Strengthening the ties of our trade association relations so that we can take advantage of closer cooperation with associations in fields that are related to our industry.

"3. Finally, pressing onward in the concerted activities in which we have made such steady gains.

"This work can be carried on effectively only through even closer cooperation and the resolve by every member to do everything possible to enlist new members and to take more active part in the work of the Association."

Young Lithographers Meet

The first meeting of the Young Lithographers Association for the 1938–39 season was held at the Advertising Club, New York, on Sept. 29. A moving picture entitled "The Making of a 24-Sheet Poster," produced by McCandlish Lithographing Corp., New York, was shown. The picture illustrated the making of a 24-sheet poster from the time it is created by the artist to the day it is placed on the outdoor advertising panels. H. A. Speckman, sales manager of the company, was in charge of the showing.

Also presented was a movie with the title, "Over the Counter and Off the Shelf," produced by *Modern Packaging*, illustrating the progess that has been made in package design since the day of the country store. Following the showing of the two movies, Martin Ullman, package designer, spoke on "How Package Design and Construction Has Increased the Sales of Lithography and Merchandise."

The next meeting of the Young Lithographers Association will be held on Oct. 27 at the Advertising Club. The meeting will be a joint gathering with the Young Printers Association. Howard W. Dickinson, advertising agent, will speak on present day advertising procedure, while Dexter Matthews, editor of Consumers' Research, will talk on advertising from the consumers' viewpoint.

Convention Camera

(*from page 23*)

chested bird was found still to be going strong.

. . .

Speaking of awards for various accomplishments, there was a proposal that a special award be voted to Paul Heideke on the ground that he is one of the few residents of our fair capital city who actually *works* for a living.

. . .

S. M. Sears and A. H. Spaulding of Boston made their trip to the convention by plane,—their first air venture, they said.

. . .

Farmer of Coxhead did a fadeout Saturday night and slid down to O'Donnells for a quiet dinner. There is no escaping the roving agents of The Photo-Lithographer, he found.

Summerfield Eney was the last speaker to appear before the convention, and one of the last to leave the Wardman Park. He said as he mounted the speaker's stand that the photo-lithographers thought of him just as they did of offset paper—last instead of first. He left Washington for the U. T. A. convention in Indianapolis.

"Dip" Olsen was the culprit who had the watch that the association presented to Paul Heideke, had it for safe-keeping, that is. When the time came to make the presentation, high nor low, Skipper Olsen could not be found. Some thought he had really absconded, but as it turned out he had just stepped out for the air.

N. Y. Litho Club Meets

The New York Litho Club held its first meeting of the 1938–39 season at the Builders' Club, New York, on Sept. 24. Jack Griffin, president of Uranium Lighting Co., New York, spoke on "Lighting for the Graphic Arts."

Salesmen's Compensation

(*from page 30*)

mark-up. If we fail to do this, many of us will never make a profit. In many plants the profit shown at the end of the year barely equals the mark-up on the paper sold. If the salesman takes his good time to sell better paper on which the mark-up is greater, surely he, too, desires his commission."

Many of the operators showed interest in the plan of paying commission on cost and a share of the profit. However, the owner of one large plant which employs over twenty salesmen felt that he could not afford to pay over seven per cent commission. He is very much interested in the idea of paying a commission on cost and giving the salesmen a share of the profit on individual jobs.

Peddler or Salesman?

(*from page 43*)

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This job of selling lithography, be it fifty or one hundred copies of a letter reproduction or a million cook books, ten thousand window displays or a 24-sheet poster, is very important. A good salesman is not only well qualified to really represent his house, know their policies, know their customer attitude, but is prepared to promote it in a sound and constructive manner. He is unwilling to throw money away on useless speculation or through the making of a price so low that a satisfactory job cannot be produced. He is willing to devote himself untiringly to the development of new business. He knows that the "big shot" with one customer is a liability. It is a serious job and calls for hard work both mentally and physically, but the results for the man who is willing to work are well worth the effort not only in money but in personal satisfaction.

Lehmann to Exhibit

Lehmann Printing and Lithographing Co., San Francisco, will be an exhibitor at the annual convention of American Bottlers of Carbonated Beverages, to be held in New York, Oct. 31 to Nov. 4. The company specializes in the production of labels for the soft drink bottling trade.

American Type Founders, Elizabeth, N. J., recently announced the appointment of Ned Rudolph as its special machinery representative.

N. A. P. L. Meets in Washington

(*from page 23*)

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pH CONTROL in Photo-Offset

By F. R. McCrumb*

W. A. Taylor & Co.

The distinction between acid and alkaline substances was recognized by man in ancient times. Very early in history he learned to identify acids by their sour taste and alkalies by their bitter taste and soapy feel. Even today taste is occasionally used as a rough index of the relative acidity or alkalinity of materials. Rough tests based on the use of some natural dyestuffs such as litmus were then used. Finally extremely accurate methods based on the use of electrometric instruments and very sensitive dyes have been developed.

Older methods gave a rough idea of the relative strengths of acids and alkalies and made it possible to classify them roughly as strong, moderately strong, moderately weak, weak, etc. These descriptive terms are very indefinite and instructions to make a solution "strongly or weakly acid" could have no definite meaning.

The introduction of the pH scale places control of acidity and alkalinity on a definite, scientific basis and enables one to express acidity and alkalinity in numerical values, which can be recorded and duplicated at any time by the same or different workers. This control method is not only accurate, but also simple in operation. It is almost as simple as taking the temperature with a thermometer or determining density with a hydrometer.

Intensity of heat is expressed as degrees on the thermometer scale, and density as degrees on the Baumé scale. Similarly the pH scale is used to denote intensity of acidity and alkalinity. It is not necessary for one to know the exact meaning of "degree Fahrenheit" or "degree Baumé" in order to determine accurately the temperature or density. It is equally unnecessary to know the exact meaning of the term pH in order to make accurate determinations of the intensity of acidity and alkalinity.

For the purpose of explanation the pH scale can be compared with the temperature scale used on the ordinary Fahrenheit thermometer. On the latter scale 32° represents the freezing point of water. Values below 32° indicate increasing coldness and the intensity of coldness increases as the numbers decrease. Values above 32° indicate increasing heat and the intensity of heat increases as the numbers increase.

In an analogous manner numbers from 0 to 14 are used to express pH values, that is, intensity of acidity and alkalinity. The value 7.0, halfway between 0 and 14 is the neutral point; that is, a solution having a pH of 7.0 is neither acid nor alkaline. The numbers below 7.0 denote acidity, intensity of acidity *increas-*

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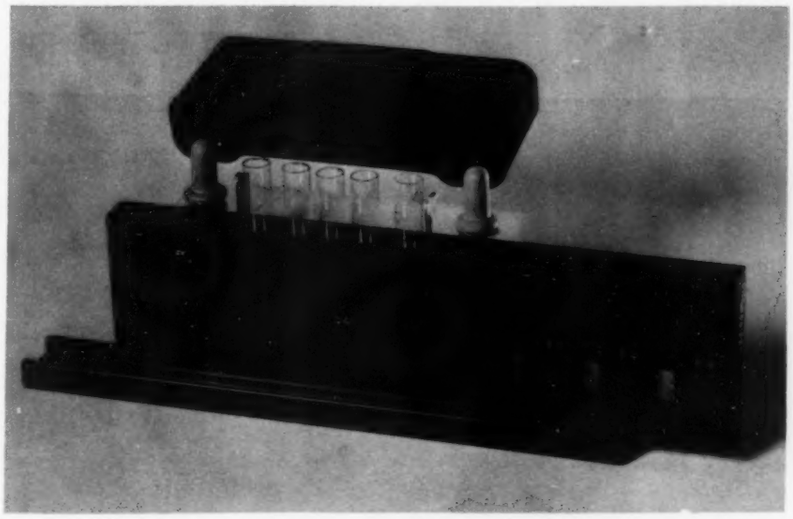

* Address and demonstration before the 6th annual meeting of the National Association of Photo-Lithographers, Washington, Oct. 8, 1938.

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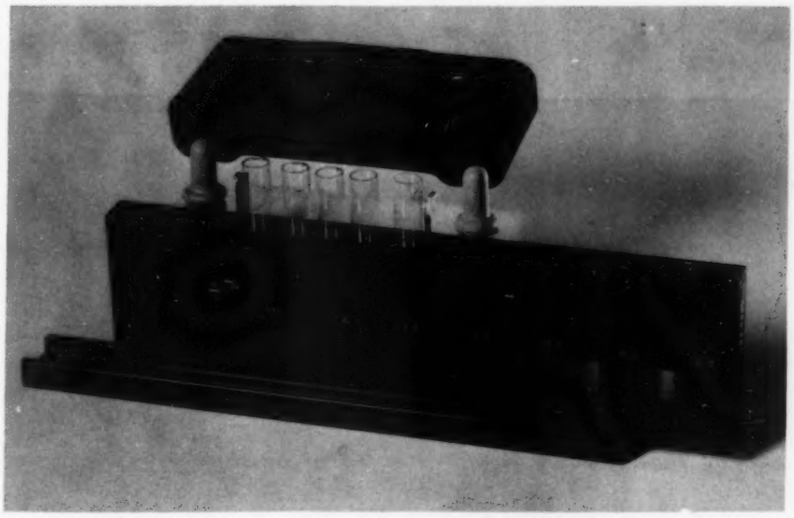

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ing as the numbers *decrease.* Thus a solution of pH 6.0 is slightly acid, one of pH 5.0 more intensely acid and one of pH 4.0 is still more intensely acid, etc.

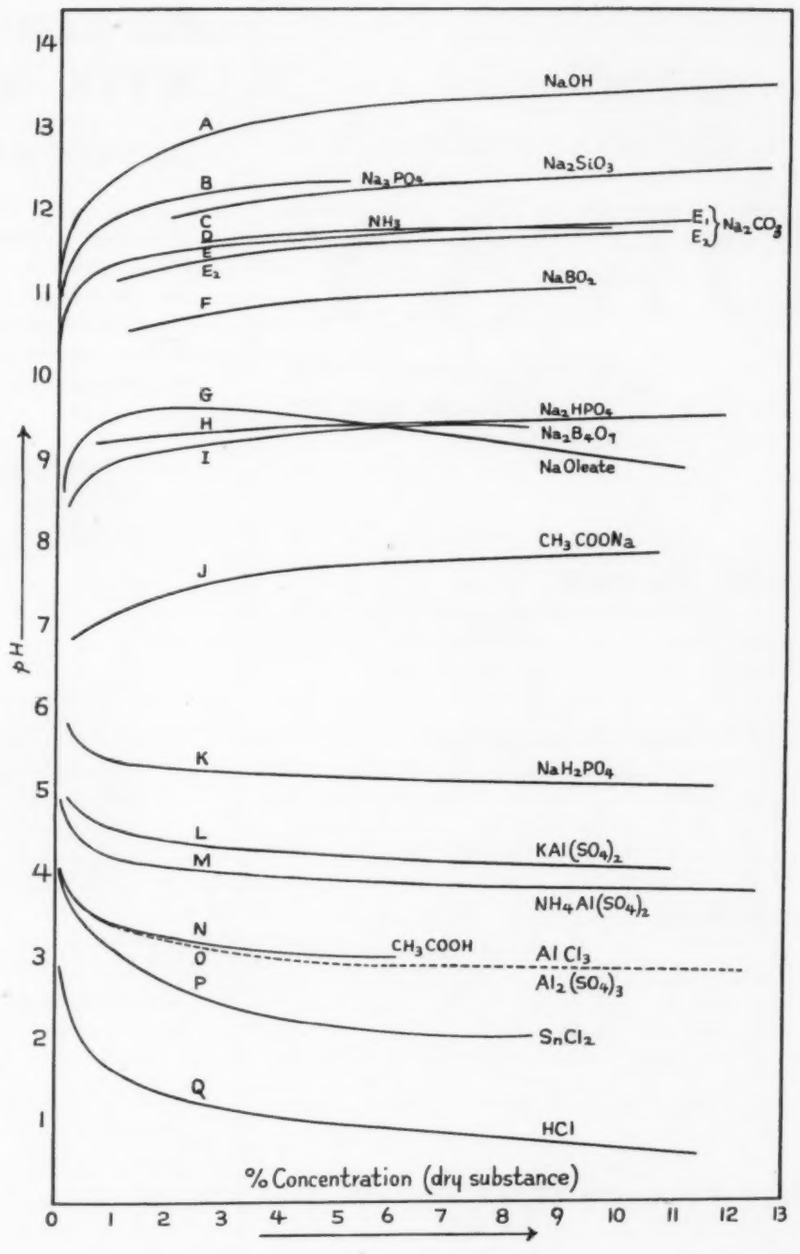
On the other hand, the numbers between 7.0 and 14.0 are used to denote alkalinity, the intensity of alkalinity increasing as the numbers increase. Thus a solution of 8.0 is slightly alkaline, one of 9.0 more strongly alkaline and one of 10.0 more intensely alkaline.

These numbers represent absolutely definite degrees of acidity and alkalinity and therefore a statement such as "acidify to pH 4.8" or "make alkaline to pH 8.4" has a very definite meaning which cannot be expressed by the terms "slightly acid or alkaline."

The true acidity or alkalinity of a solution does not depend entirely on the total concentration of acid or alkali present but rather on the concentration that is active. The active acidity or alkalinity of a solution is determined by the concentration or activity of the hydrogen ion. Expression in terms of actual concentration or activity requires the use of fractions with very large denominators. For example, at exact neutrality (pH 7.0) the hydrogen ion concentration is $\frac{1}{10{,}000{,}000}$. Consequently the hydrogen ion concentration or activity is denoted by a negative logarithmic value. The pH is the logarithm of

$$\frac{1}{\text{Hydrogen Ion Concentration}}$$

Those who desire a more detailed explanation can secure it from books on this subject such as Clark's *The Determination of Hydrogen Ions,* 1928, Williams & Wilkins, Baltimore; Kolthoff and Furman's *Indicators,* 1926, John Wiley and Sons, Inc., New York; Kolthoff's *pH and Electro-titrations,* 1931, John Wiley and Sons, Inc., New York; Britton's *Hydrogen Ions,* 1929, Chapman and Hall, Ltd., London, England; or the free booklet *Modern pH and Chlorine Control,* W. A. Taylor & Co., Baltimore.



The use of pH (negative logarithm) sometimes causes confusion at first. It should always be remembered that a *decrease in pH denotes an increase in active acidity* and *an increase in pH denotes a decrease in active acidity* (increase in active alkalinity). In addition since pH is a logarithmic function, a solution having pH 6.0 contains 10 times as many hydrogen ions as one with pH 7.0. Similarly a solution with pH 5.0 contains 100 times and a solution with pH 4.0, 1000 times as many hydrogen ions as one with pH 7.0. These points cannot be over-emphasized.

The curves illustrated above show the pH values of solutions of a few common acids and alkalies as well as recommended values for fountain solutions. Unless otherwise noted the concentration of acids and alkalies is 0.1 N.

There are two general procedures used in determining pH, the electrometric and the colorimetric. In the electrometric method the pH is determined by measuring with a potentiometer

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OKAY

Therefore we urge every lithographer to send for samples of —

OKAY Opaque

for Better Finished Negatives in Shorter Time

Smooth flowing for the rapid brush sweep . . . dense opacity . . . drys quickly . . . non-cracking.

OKAY Developing Ink

for Dependable Press Plates in a Flash

Easily applied to any metal . . . clear, sharp, and acid resistant image . . . stands up for long press life . . . releases easily under high humidity from bare grain.

Cellulose Opaque (for Masking)

The Opaque that Really Opaques

Designed primarily for the production of an opaque film on Nitrocellulose and Acetate cellulose masking sheets. Lays smooth, will not creep or run . . . one application gives film of dense opacity . . . dries quickly and is non-cracking . . . film is easily removed with water . . . no preparation on surface of sheet is necessary to get a "bite."

Wet Process Opaque (Oil Base)

Has extremely smooth film and will not pile up . . . will hold tenaciously on glass . . . one application gives film of dense opacity . . . perfectly sharp lines may be cut without chipping . . . film is easily removed with alcohol . . . will not injure negative . . . will not chip or flake under heat . . . can be used in ruling pens.

●

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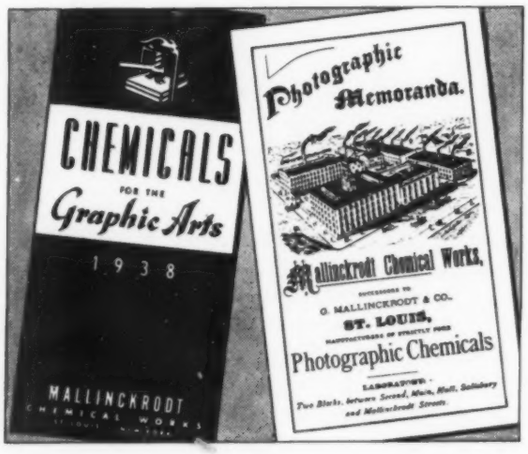
THAT WAS FIFTY-SIX YEARS AGO

Even then, we felt ourselves quite grown up. Already, we had rendered fifteen painstaking years of chemical service. We were well on our way toward the present line of Mallinckrodt Photo-Purified, physically as well as chemically, perfected Chemicals for the use of photographers and the graphic arts.



It was then that we issued the catalog shown above with our 1938 edition. Notice the illustration of the plant in 1882.

We present this as a reminder that our 1938 Edition should be kept in easy reach, and that should it be worn out or mislaid, a postal card will bring another.

Mallinckrodt

CHEMICAL WORKS

SECOND & MALLINCKRODT STS., ST. LOUIS, MO.

70-74 GOLD ST., NEW YORK, N. Y.

CHICAGO PHILADELPHIA TORONTO MONTREAL

the voltage developed by two electrodes of special character in contact with the solution. The fundamental pH method is based on the use of the hydrogen electrode, a platinized electrode saturated with pure hydrogen gas. All other methods are secondary whether they are electrometric or colorimetric. While the hydrogen electrode is the standard method it is not very practical and other types of electrodes are usually used for pH control.

IN lithographic work where dichromate is often present the only electrometric method that can be relied upon is the glass electrode. While electrometers using the glass electrode are reasonably easy to operate, they lack the simplicity and ruggedness of the colorimetric comparator. In addition the cost is much higher since the same investment must be made whether one needs a short or a long range instrument.

For making pH determinations by the colorimetric method, substances known as indicators are required. An indicator is a substance such as a synthetic organic dye that gives different colors or different shades of color at different pH values. Thus bromcresol green changes from yellow at pH 3.8 to blue at pH 5.4, that is, if bromcresol green is added to a solution having a pH of 3.8 it will give this solution a yellow color. If added to another solution having a pH of 4.0, it will give a somewhat greener shade of color. If added to other solutions having pH values of 4.2, 4.4, 4.6, 4.8, etc. the amount of blue will increase progressively until at pH 5.4, the solution will have a deep blue color. Therefore, if bromcresol green is added to any solution having a pH between 3.8 and 5.4, the pH of that solution is determined by observing the color obtained.

To determine the exact pH a set of bromcresol green color standards is required These standards can be made by adding 0.5 cc. of a carefully standardized solution of bromcresol green to each of nine tubes containing 5 cc. of solutions having the pH values 3.8, 4.0, 4.2, 4.4, 4.6, 4.8, 5.0, 5.2 and 5.4, respectively. These standards can be placed in sealed ampoules and mounted in a plastic case or slide. The pH values are then placed directly above the standards. Ampoules of distilled water alternate with the standards.

While color standards can be made from some artificial material by simulation, solution standards tend to give more satisfactory results since one is then comparing two materials of similar medium. In addition the cost of such artificial standards is usually several times that of solution standards.

If the materials being tested are absolutely clear and colorless, accurate determinations can sometimes be made by comparing the color of the test sample directly with those of the color standards. Most solutions encountered in practice are somewhat turbid or colored or both. Therefore when an indicator solution is added to such a material, the resulting color may not match the color standards which contain none of the color or turbidity of the sample. In such cases some type of comparator should be used. In fact all determinations should be made with a comparator since the presence of even minute quantities of color or turbidity may cause considerable error or even prevent a match altogether when an attempt is made to match the sample with the standards.

The most modern type of pH comparator is the slide comparator. It consists of two principal parts, the slide and the base as shown in the illustration at the beginning of this article.

The slide is a plastic case 10 inches long, 2⅞ inches high and ⅝ inch thick. It contains 17 vertical holes and 17 horizontal slots which pass through the exact centers of the holes. In these holes are placed the 9 color standards for any given indicator and 8 ampoules of distilled water, the color standards alternating with the ampoules of distilled water. All these ampoules are held in place by a strip which is screwed on the bottom of the slide.

THE base consists of two parts. The lower part contains a slot for the slide fitted with a key to stop the slide at the end standards, two holes containing vials of indicator solution, with 0.5 cc. pipettes and nipples, five holes containing test tubes and a closed compartment for a ground glass plate. Horizontal slots run through the three central holes in the base holding the test tubes, these slots corresponding exactly with any three of the slots in the slide. The upper part of the base serves as a cover for the vials and test tubes, when the set is not in use. It is fastened to the lower part by means of spring catches. The complete set, including the slide, is 10 inches long, 2 3/16 inches wide and 4 inches high and weighs only 1½ lbs.

Making a pH determination consists in only three simple operations:

1. After removing the top of the base, three of the test tubes are placed in the holes back of the slots in the base and filled to the mark (5 cc.) with the sample to be tested, as shown in illustration No. 1; 2. To the

central tube 0.5 cc. of the indicator solution is added, by means of the pipette and nipple, and

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"ANOTHER TRIANGLE TRIUMPH"

AN OFFSET BLACK THAT GIVES AMAZING RESULTS

This Offset Black Ink our chemists have perfected has a density that will surprise you. It works smoothly on the press; has all the coverage you expect; dries quickly, yet does not tone down; gives to solids that rich, velvety effect your customers like, yet prints type and fine details of halftones as clean and sharp as could be desired. Test out EQUAPO on the next job for a fussy customer. You will then agree that it is the finest offset black that has ever been produced, with complete opacity, richness of tone, yet moderately priced.

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A REAL PEACOCK BLUE that is absolutely Permanent to the elements and will withstand heat, alkali, acid and alcohol.

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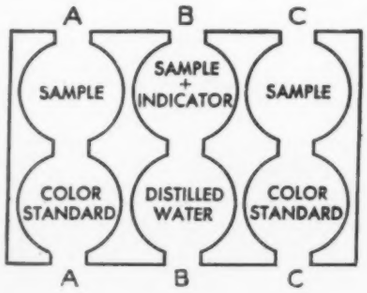
AUGUST FLORIDOT SCHIEFER

Main Office & Factory
26-30 FRONT STREET, BROOKLYN, N. Y.
Telephone Triangle 5-3770-71

the contents are thoroughly mixed, as shown in illustration No. 2; 3. The slide containing the color standards is now placed in position on the base and, holding the instrument toward a window or other source of daylight, the slide is moved back and forth in front of the test samples until a color match is obtained. The pH is then read off directly from the values on the front of the slide, as shown in illustration No. 3.

The arrangement of the three tubes of test sample, the two color standards and the ampoule of distilled water is illustrated in the figure below:



AA, BB, CC, represent the three slots in the base and any three corresponding slots in the color standard slides. If we consider the color standards as consisting of distilled water and indicator only, which is permissible since they contain no turbidity and no color except that given them by the indicator, it is clear that on looking through slots AA, BB and CC, one is looking through exactly the same materials,—sample, indicator, distilled water,—in each case. This arrangement, therefore, eliminates any effect of color or turbidity in the sample so that, when the proper color standards are in place, the color of the sample will match one of the color standards or lie between the colors of two consecutive standards. Because of the small diameter of both the test tubes and color standards (11.5 mm.) very highly colored and turbid solutions can be read with the slide comparator.

A complete series of color standard slides is available to cover the pH range from 0.2 to 13.6.

Name	pH Range	Color Change
Acid Cresol Red	0.2–1.8	Red-Yellow
Acid Meta Cresol Purple	1.2–2.8	Red-Yellow
Thymol Blue	1.2–2.8	Red-Yellow
Benzo Yellow	2.4–4.0	Red-Yellow
Bromphenol Blue	3.0–4.6	Yellow-Blue
Bromcresol Green	3.8–5.4	Yellow-Blue
Methyl Red	4.4–6.0	Red-Yellow
Chlorphenol Red	5.2–6.8	Yellow-Red
Bromcresol Purple	5.2–6.8	Yellow-Purple
Bromthymol Blue	6.0–7.6	Yellow-Blue
Phenol Red	6.8–8.4	Yellow-Red
Cresol Red	7.2–8.8	Yellow-Red
Meta Cresol Purple	7.6–9.2	Yellow-Purple
Thymol Blue	8.0–9.6	Yellow-Blue
Phthalein Red	8.6–10.2	Yellow-Red
Tolyl Red	10.0–11.6	Red-Yellow
Parazo Orange	11.0–12.6	Yellow-Orange
Acyl Blue	12.0–13.6	Red-Blue

However, it is only necessary to secure sufficient slides to cover the pH range in which control is desired. For example in controlling the pH of fountain solutions only one slide may be required. According to the findings of the Research Dept. of the Lithographic Technical Foundation, Research Bulletin No. 6, Supplement No. 1, bromcresol green (pH 3.8–5.4) is satisfactory for fountain solutions with aluminum plates where the tentatively recommended pH is 4.6. With zinc plates the tentatively recommended pH is 3.8, and bromphenol blue (3.0–4.6) is the most suitable indicator.

That the slide comparator gives quite accurate results on fountain solutions has been demonstrated by comparing the results obtained with those secured by a sensitive electrometric method, the Coleman Glass Electrode.

The solutions examined were prepared in accordance with the formulas recommended in Research Bulletin No. 6, Supplement No. 1. In each series the pH was varied to cover the useful range of the indicator. The maximum variation was 0.1 pH which is within the sensitivity of the colorimetric method. The indicators used were bromphenol blue and bromcresol green.

The advantages of the colorimetric method described are that it combines low cost and simplicity of operation.

COMPARISON OF COLORIMETRIC AND ELECTROMETRIC pH

No.	Fountain Solution (Zinc Plates)		No.	Fountain Solution (Aluminum Plates)	
	Slide Comparator	Coleman Glass Electrode		Slide Comparator	Coleman Glass Electrode
1	3.1	3.20	1	3.9	3.98
2	3.4	3.39	2	4.2	4.27
3	3.6	3.62	3	4.4	4.50
4	3.7	3.70	4	4.7	4.75
5	4.1	4.07	5	5.0	5.05
6	4.3	4.25	6	5.3	5.35

• HUNT

OFFERS A COMPLETE LINE OF CHEMICALS for the LITHOGRAPHER

Listed below are twelve of our most widely used chemicals for the Lithographic Industry. Like all Hunt products they are carefully pre-tested and of such uniform quality that they always give the same results. Complete catalogue and price list on request.

Glycerine C.P.

Hydroquinone

Rubber Solution

Negative Collodion

Stripping Collodion

Gum Arabic Selected

Litho Developing Ink

Edible Hen Egg Albumen

Paraformaldehyde U. S. P.

Sodium Carbonate Photo Pure

National Photographic Carbons

Sodium Sulphite Anhydrous Photo

PHILIP A. HUNT COMPANY

2432 LAKESIDE AVE. CLEVELAND, OHIO (EST. 1909) 1076 W. DIVISION ST. CHICAGO, ILLINOIS

253-261 RUSSELL ST. BROOKLYN, N. Y. 111 BINNEY STREET CAMBRIDGE, MASS.

The apparatus shown at the right is used in the Vulcan Laboratory for testing the oil resistance of Vulcan Offset Blankets and other products. Tests of this kind often extend through a period of many months or even years.

To Protect YOUR presswork

against offset blanket trouble

All Vulcan Offset Blankets are made under close supervision of the well-known Vulcan Laboratory. To protect *your* presswork — and thus maintain the leadership of Vulcan Offset Blankets — all manufacturing operations are carried out under constant laboratory supervision.

The Vulcan Red Blanket is a typical laboratory-controlled Vulcan product. Originally developed for metal decorating — and now used by every big metal decorator in the country, except one — this blanket is also widely used as an all-purpose offset blanket. It is a soft blanket, with remarkable resistance to bruising and puncture. It is highly resilient, has a fine surface texture, and is exceptionally uniform in quality.

Other Vulcan Offset Blankets include the popular new No. 43 Blanket, for multi-color work, commercial printing, photo-offset, and in fact all purposes except metal decorating; and the Vulcan Black Blanket, Style 808, for those who prefer a harder blanket, particularly for color and other screen work.

Write for information about Vulcan products for offset printing. Please address Vulcan Proofing Company, First Ave. and 58th St., Brooklyn, N. Y.

Vulcan

OFFSET BLANKETS

In and About the Trade

Start Training Course

The ten weeks' course in the fundamentals of lithography given by the Lithographic Technical Foundation, New York, for young men selected by lithographic firms for technical training was begun last month. The majority of the men selected for the course were chemical engineering graduates. Four days of each week throughout the ten weeks are devoted to practical instruction in the various processes, such as camera operation, press operation, plate making, color correcting, stripping, etc. One day a week is given over to lectures and discussions by engineers on the theoretical aspects of the processes and equipment used. Inspection trips to representative plants are also on the schedule.

Y. P. E. Club Meets

The first meeting of the Young Printing Executives Club for the new season was held at the Hotel Dixie, New York, on Sept. 19. The theme of the meeting was "Labor Relations in the Printing Industry." A sound slide film, "What Employees Think," was shown. Following the film, A. L. Goodman and A. Vogl, of the New York Employing Printers Association, explained the labor policies of the Printers League section, and of the Master Printers section, respectively, of the association.

State Issues Picture Checks

New York State has designed a new type of lithographed bank check carrying an illustrated advertising message calling attention to the state's scenic and recreational advantages. The checks bear a design picturing Niagara Falls, the Saratoga Spa and Jones Beach, presented against a tapestry background of miniature reproductions of the state seal. Some 2,500,000 persons receive state checks each year, it is estimated. The printing of all the new checks is to be black, but six colors of paper will be used, indicating the purpose for which the check is issued. The checks are to be used by all state departments.

Graphic Arts Council Outing

The Graphic Arts Council of the New York and Brooklyn Federations of Jewish Charities held its second annual golf tournament, September 29, at the Glenwood Country Club, Great Neck, L. I. Prizes for the lowest net golf scores in each class and the lowest net score in each foursome were awarded at a dinner later in the day. The Graphic Arts Council is composed of members of the printing and allied trades who are interested in the humanitarian work of the charities affiliated with the New York and Brooklyn Federations of Jewish Charities.

Adds Direct Color Photo Dept.

Lehmann Printing and Lithographing Co., San Francisco, recently installed its own direct color photography department. Vignettes of fruits, vegetables and other food products direct from the subject, working from color transparencies or colored proofs, are being produced in the new department.

Saunders on Award Jury

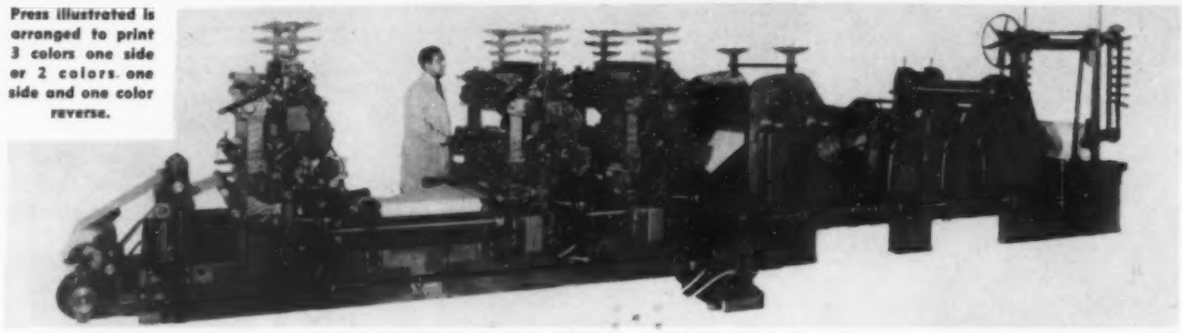
Maurice Saunders, chairman of the board of the Lithographers National Association, will serve as one of the award jurors at the Ninth Annual Exhibition of Outdoor Advertising, to be held in Chicago, next month. Many lithographers are participating in the contest for the best 24-sheet and smaller posters. The exhibition will be held at the galleries of Marshall Field Co., Chicago.

U. T. A. Holds Convention

The fifty-second annual convention of the United Typothetae of America was held at Indianapolis, Oct. 10, 11 and 12. General sessions in the forenoons and group meetings in the afternoons was the order of the program. Among the speakers were Clark R. Long, Past President of the International Association of Printing House Craftsmen, and assistant director of Engraving and Printing, who spoke on "The Manufacture of United States Currency"; Frank E. Wagner, S. D. Warren Co., Boston, who spoke on "New Developments and the Printability of Paper"; Watson Gordon, Doremus & Co., Boston, who spoke on "Do You Want to Stay in the Printing Business?" and Harry L. Gage, Mergenthaler Linotype Co., Brooklyn, who spoke on "Sales Problems in the Printing Industry."

Harry C. Jones Dies

Harry Chapman Jones, 73, inventor of the Rutherford photocomposing machine manufactured by General Printing Ink Corp., New York, and of other photo-composing and photoengraving machines, died in New York on October 3. Mr. Jones was the author of many books on photography. In 1926 he retired as president of Litho-Printex Corp. of New York and London. He was the founder of the old Harry C. Jones Engraving Co., and the H. C. Jones Engraving Co., now the Royal-Jones Photo Engraving Corp. in New York. His wife and three children survive.



Press illustrated is arranged to print 3 colors one side or 2 colors one side and one color reverse.

NEW ERA *Multi-Color* WEB OFFSET PRESSES

Economy of operation plus speed and accessibility of New Era Presses makes investigation worth your while.

Each press built to customer's specifications; thereby permitting many special features to meet the requirements of each plant; be it special size, number of colors, etc.

Perfect register is assured at high operating speed due to an automatic web tension control.

All printing cylinders are made of solid forged steel and mounted in anti-friction bearings which insures perfect printing at all times.

The litho plate is secured to the cylinder without a gap in same and is the quickest plate lock-up means manufactured.

Presses can be equipped to either rewind the printed web into rolls, fold in parallel or right angle folds, or can be equipped to cut into sheets. When equipped to cut into sheets, the sheet pile delivery will pile and jog the sheets at a speed of 12,000 sheets per hour.

THE NEW ERA MANUFACTURING CO., 375 ELEVENTH AVE., PATERSON, N. J.

LITHOGRAPHIC PLATE GRAINING CO.

OF AMERICA INC.

One reason why we have grown to be the largest plate graining plant in the world is that every plate, no matter how small, must be exactly *right* before it leaves our plant . . and it must leave on "time" or sooner than promised.

Zinc and Aluminum Plates

UNGRAINED GRAINED REGRAINED

We specialize in small plates; including plates for the Multilith.

Service plus Quality— **You get this important *combination* when you send your plates to us.**

LITHOGRAPHIC PLATE GRAINING CO.

41-43 Box St., Brooklyn, N. Y. of America, Inc. EVergreen 9-4260-4261

Hopf Wins Award

Harry Arthur Hopf, president of H. A. Hopf & Co., New York, and a guest speaker at the National Association of Photo-Lithographers Convention in Washington, October 6–8, was awarded the gold medal for conspicuous services rendered to the management movement at the seventh meeting of the International Committee for Scientific Management in Washington recently.

Holds Exhibit

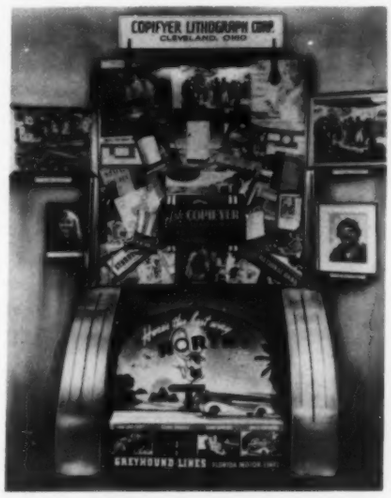
"Fifty Years of Organized Lithographic Progress" was the theme of an exhibit held in honor of the Lithographers National Association at the Roger Smith Gallery, New York, Sept. 26 to Oct. 8. The exhibit was under the auspices of *The National Lithographer*. On view were many specimens of old and new lithography in many fields from the files and presses of present-day members of the Lithographers National Association. On Oct. 5 the association marked the fiftieth anniversary of its founding.

Joseph Martini Dies

Joseph Martini, 63, lithographic expert on the offset staff of Miehle Printing Press & Mfg. Co., Chicago, died last month. Mr. Martini was born in St. Louis and entered the printing field at the age of seventeen years, and eventually rose to the position of superintendent in the lithographic department of Woodward & Tiernan, St. Louis. He joined the staff of Miehle Printing Press & Mfg. Co., in 1933, and was responsible for many improvements in plate making production and offset printing methods.

Peacock Joins Siebold

Grover C. Peacock formerly with Charles Eneu Johnson & Co., Philadelphia, printing and lithographic ink manufacturers, as office and credit manager, has joined J. H. & G. B. Siebold Co., New York, also manufacturers of lithographic and printing inks.



Copifyer Shows Display

Copifyer Lithograph Corp., Cleveland, was a prominent exhibitor at the convention of the National Industrial Advertisers Association held in Cleveland last month. A photograph of the company's exhibit is shown above.

Cantine Marks 50th Year

Martin Cantine Co., Saugerties, N. Y., manufacturers of coated papers, entertained paper merchants from every part of the country on September 12 and 13 at the Woodstock Country Club, Woodstock, N. Y., on the occasion of the 50th anniversary of the founding of the company. To commemorate the event, the company issued a booklet tracing the development of the "guild" of paper coaters and showing the newest methods used in their processes. Copies available on request.

Form Fox Photo

Fox Photo Half Tone Printing Co. is the name of a new concern specializing in the production of photographs screened in halftone for the making of offset plates, with offices at 520 North Grand Blvd., St. Louis.

Thomas C. Bent Dies

Thomas C. Bent, 74, of Brooklyn, lithographer and a pioneer in the development and use of the offset press, died suddenly last month. Mr. Bent, who was a native of Manchester, England, worked with the British and Canadian governments in the years between 1905 and 1912 introducing the offset press into use. During the World War he was employed in the printing division of the United States Government. For many years he worked in the lithographing division of Metropolitan Life Insurance Co., and in more recent years had been associated with Barton Business Service, a New Jersey concern. He resigned his position several months ago. Surviving are his widow, a daughter, and two sons.

Photo Chemicals Imports Up

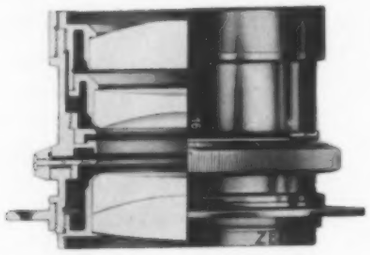
Imports of photographic chemicals of coal-tar origin into the United States for the first half of 1938 totaled 34,350 pounds, as compared with 9,469 pounds for the corresponding period in 1937. The total for the entire year of 1937 was 64,010 pounds, 37,098 pounds in 1936, and 16,875 pounds in 1935. Hydroquinone imports during the first half of 1938 amounted to 15,402 pounds. Imports of this product during the year 1937 totaled 33,000 pounds, an increase over 1936 imports of 14,503 pounds and 1935 of 7,182 pounds.

Coy, Hunt & Co. Moves

Coy, Hunt & Co., lithographic paper suppliers, formerly at 259 West 10th St., New York, have moved to 425 Fourth Ave.

D. M. A. Awards Merck

Merck & Co., Rahway, N. J., have been selected by the Direct Mail Advertising Association as one of the fifty "Direct Mail



Supremely Fine Correction

The Zeiss Apo-Tessar lenses are famous for their uniformly high quality. They have the advantages of simplicity and compactness of design, and are the product of unequalled manufacturing facilities, and a 91-year tradition in the making of finest optical equipment. For chromatic correction, sharpness of definition and flatness of field, they are unsurpassed. Catalog upon request.

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CARL ZEISS JENA

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Get the next order from Illinois Plate Graining Co., Chicago!

A reminder like this may save you time and money, and give you a better job, when next you need

GRAINED ZINC
GLASS, ALUMINUM
AND MULTILITH PLATES

Fine Quality - Prompt Service - Reasonable Prices

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MAY WE HELP YOU

to speed up make readys

By reducing your paper troubles such as distortion, wrinkling, static, picking, misregister and obraining the correct moisture content. Or if you are troubled with any of the other mechanical ills of lithography as listed below, our experience in solving these problems may help you to make substantial savings.

Moisture control and paper conditioning	Lack of depth and sharpness of grain
Press streaks and distorted halftone dots	Illuminating and arc lamp problems
Excessive plate spoilage and short plate life	A. C. brakes and change over from D. C. advice.

If your technical man cannot give his undivided time to the solution of your problem

Consider Our Consulting Service

C. W. LATHAM ASSOCIATES
6 LAFAYETTE AVE. BROOKLYN, N. Y.

The Mezzograph (Grain) Screen

in Photo-Lithography

The Mezzograph Screen was originally made only in Europe, and in recent years has been excluded from this country by a prohibitive tariff. It is now manufactured in this country and has many uses.

It is invaluable in the reproduction of Copy which was printed from Half-tone plates, as "moire" or geometric pattern is avoided.

Perfect Highlight negatives may be made with it. In fact it affords the only simple and successful method of making perfect highlight negatives.

In Color Work, there is no danger of pattern at any angle. A slight shifting of the screen between colors is all that is required.

A Mezzograph Screen is used in the making of Litho-Collotype Plates; the most beautiful of all printing processes.

Manufactured Exclusively in the United States by

W. L. MOORE
10 W. Warren Ave. Detroit, Mich.

Leaders" of 1938. Douglas W. Coutlee, advertising director of the company, was a guest speaker at the annual meeting of the Direct Mail Advertising Association held in Chicago, Sept. 28 to 30. Mr. Coutlee spoke on advertising control.

Addresses Chicago Group

William Garretson, chief chemist of Sinclair & Valentine Co. in Chicago, addressed the first meeting of the fall and winter educational program of the Lithographers Club of Chicago, in that city on September 22. His subject was "Gloss Offset Printing Inks."

Elects T. R. Jones

Thomas R. Jones, president of American Type Founders Corp., Elizabeth, N. J., was chosen a vice president of the International Committee for Scientific Management, at the management congress held in Washington last month.

Announces Offset Corrective

DeVilbiss Co., Toledo, O., has announced a new double purpose solution for the prevention of offsetting, to meet the special requirements of the carbon printing industry. The new solution is said to contain paraffin which lubricates the surface of the printed stock, contributing to easy forming and prevention of smearing. Information on the new solution, which is known as "Type DPHS," is available on request.

Hammermill Portfolio

Hammermill Paper Co., Erie, Pa., has recently mailed a portfolio of samples of its offset paper stock, showing thirteen separate jobs as a cross-section of the type of work produced on its papers. Envelope enclosures, a menu, a travel book, letterheads, direct mail pieces and window posters are included.

New Equipment and Bulletins

Announces New Proof Press

Vandercook & Sons, Chicago, have announced a new proof press equipped with grippers. It is a precision machine guaranteed, according to the makers, to print perfectly forms or halftone up to 16 5/8 inches by 24¼ inches. The new press is said to be of extra heavy construction and easy to operate. It is inked by hand.

Offer New "No-Offset" Unit

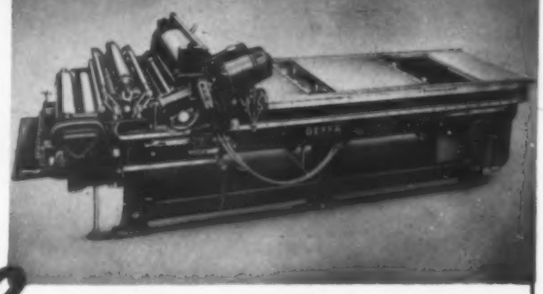
Paasche Airbrush Co., Chicago, has recently placed on the market a new "No-Offset" unit which is entirely air operated. It has a perfected automatic off-and-on timing valve and special air check valve which replaces all electric switches and electric solenoids previously used to actuate the "No-Offset" airguns. Bulletins and photos describing the new units will be sent upon request by the manufacturers. The Paasche Co. has also developed a new "No-Offset" solution which they claim has a more effective sheet separation and eliminates objectionable overspray. It is also stated that the new solution is made from ingredients that are non-toxic and harmless to health.

New "Photrix" Calculators

Intercontinental Marketing Corp., New York, has just added two new calculators, one for determining exposure time in enlarging, and the other for converting any light measuring device into an exposure meter, to its "Photrix" line of equipment. The enlargement calculator is designed to find the required enlarging time after the light emerging from the lens of the enlarger has been measured with "Photrix Photometer." The picture-size scale extends up to prints of 40 inches by 60 inches, and the exposure-time scale from 10 minutes down to 0.15 seconds. The other, the "Photrix" exposure calculator, has been designed especially for light meters of high sensitivity, allowing, it is said, light readings down to 1/40 of a foot candle. The over all measurements of the calculators are 4 inches by 4 inches. The company has also recently designed a device for fastening the "Photrix" exposure meter to the camera, its advantage being one of convenience. It is said to be adaptable to any camera with the usual view finder bracket.

Webendorfer Offset Jobber

Webendorfer-Wills Co., Mt. Vernon, N. Y., manufacturers or printing machinery, recently announced the development of a new offset job press. The new press, according to the manufacturer, will accommodate a sheet as large as 14¼ inches by 18½ inches, with a maximum printing capacity of 13⅞ inches by 17¾ inches, and a maximum plate of 17 inches by 18 inches and .009 inches thick. It is equipped with a vacuum air feeder that may be operated independently of the press with a



Basically new in design -

THE "DEFFA" OFFSET PROOF PRESS

is the one machine that represents a real advance in proofing methods . . . it is distinctly NOT just another proof press with a few constructional refinements. . . . it is the only machine of its kind that is equipped with a power operated automatic inking system and automatic dampening device. The ink distribution is excellent, and this, plus efficient mechanical dampening insures proofs that reflect the true value of the plates, with color that will be the same as when the job is actually run. . . . these, and many other important advances in design can be quickly demonstrated in our showrooms, where the "DEFFA" is now in operation - your inspection is invited. For additional information, write to

KARL *Krause* U. S. CORPORATION

55-57 VANDAM STREET · NEW YORK · WALKER 5-8870 · CABLE ADDRESS: KRAKRAUSE

Deep Etched **HAND TRANSFERS** Deep Etched

The Only Deep Etched Plate Which Is Fool Proof — Sensational — No Scumming Or Undermining Of Plates. Outlast Runs. Over 700 Plates Not One Make Over. Your Pressman Wants Them; You Will Be Delighted With Results. Cost No More Than Direct Deep Etched Plates. Process Halftone Work. Excellently Reproduced. By Phillips New Process. No Artificial Bases.

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For Long Runs Use Deep Etched Hand Transfers — Priced Right
426 SOUTH CLINTON ST. CHICAGO, ILL.
For Prompt Service — Wabash 0072

Producers of Deep Etched Hand Transfers from Engravings — Photo Lith Plates

Chalk Offsets — Plate Changes

The
PHOTO-LITHOGRAPHERS MANUAL

The Manual, lithographed throughout, includes information on every step in the production of a photo-lithographic job, from the time the piece is planned and sold through to mechanical completion.

Its 306 8½ x 11 inch pages are generously illustrated and contain a wealth of authoritative data that will clearly answer the hows, whys, and wherefores of planning, selling, and producing photo-lithography.

Who Will Find the Manual a Profitable Investment

Executives
Salesmen
Estimators
Production Managers
Plate Makers
Pressmen
ALL engaged in photo-lithography in any capacity

Instructors of Printing

Students in Schools of Printing

Lettershops

Typographers

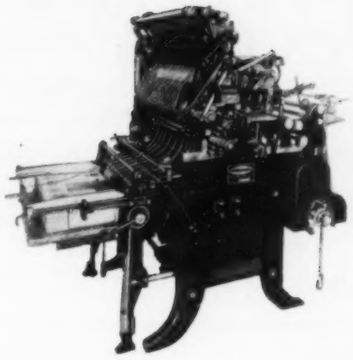
Craftsmen

Everyone engaged in any branch of the graphic arts

ALL FOR $4.00
DON'T DELAY
ORDER NOW . . . TODAY!

THE PHOTO-LITHOGRAPHER, Inc.
254 W. 31st St., New York, N. Y.

one-third horse power motor. A one-half horse power motor is used for operating the press. It is designed to accommodate a plate 7 inches by 9 inches which, it is said, can be inserted directly in a typewriter for typing. It is furnished with either extension pile delivery or with chute delivery. The feeder takes approximately 18 inches of stock and the pile delivery handles the same amount.



New Lanston Folder

Lanston Monotype Machine Co., Philadelphia, has just issued a new folder illustrating and describing its Monotype-Huebner Vertical Plate-Covering machine. The folder is a revision of former ones covering the same equipment, which includes changes in available sizes, etc. Copies available on request.

National Process Booklet

National Process Co., New York, has just issued a booklet with the title, "Books by Lithography," which contains four articles, reprinted from Book Binding and Book Production, by George E. Loder, president of the company. In the first article, "Books in Two or More Colors," Mr. Loder discusses costs and the use of lithography in book publishing. He cautions that while the use of lithography is by no means a solution for all cost problems in book publishing, there are certain factors in the offset method of which the publisher can properly take advantage before deciding that letterpress is the only way. As an example, one well-known book publisher used lithography for the production of 20 per cent of his 1937 list which included a number of foreign publications on travel, history etc., for which the cost of importation of bound books, flat sheets, or plates were prohibitive. In a second article, "Type-Proofs-Art Work," Mr. Loder discusses the practical aspects and technical problems involved in the production of offset-printed books; in a third article, "Selecting the Paper," paper problems are treated; and the fourth article discusses the albumin method, deep-etch plates and aquatone plates. Copies available on request.

Eastman "Kodachrome" Folder

Eastman-Kodak Co., Rochester, N. Y., has just issued a folder announcing "Kodachrome" professional film in popular cut sizes for standard cameras. The film is supplied in two emulsions, one color for tungsten and the other for daylight. Copies available on request.

Simplex Light Folder

Simplex Specialty Co., New York, has just issued a circular describing its new "Alto Mercury Argon Light Enlarging." Prices are given for the various models, together with instructions on operation. Copies available on request.

New Gast Catalog

Gast Mfg. Corp., Bridgman, Mich., has just published a new illustrated catalog showing its complete line of rotary vacuum pumps for printing frames. In addition to pictures of the actual units, a number of action views are included. Copies available on request.

Cramer Plate Booklet

G. Cramer Dry Plate Co., St. Louis, has just issued a booklet on "Color Reproduction of Screen-Plate Images, Including Reproduction of Kodachrome Originals," by J. S. Mertle of that company. The booklet contains practical data on photomechanics as compiled by Mr. Mertle. The principle and history of screen-plates is discussed, methods of reproduction, types of screen plates, equipment, color filters and developing solutions. Mr. Mertle explains that since the main purpose of the booklet is to discuss the production of separation images from screen-plate and Kodachrome originals, the subsequent employment of these images in the various phases of photo-mechanical plate making is not discussed. However, those interested in further information on plate making methods are referred to the Cramer publication, "Process Photography and Plate Making."

Champion Paper Booklet

Champion Paper and Fiber Co., Hamilton, O., has just issued a booklet showing specimen sheets of its "Wedgewood Offset" papers in wove special finishes, and coated finishes. The booklet is indexed for easy reference. Copies available on request.

Eclipse Sprayer Catalog

Eclipse Air Brush Co., Newark, N. J., manufacturers of spraying equipment, has just issued a catalog describing its complete line of sprayers and spraying accessories. Copies available on request.

New Hilo Bulletin

Hilo Varnish Corp., Brooklyn, has just issued a bulletin entitled "Materials for Ink Makers, Lithographers and Printers." This is a revised edition of bulletin No. 5 and copies are available.

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OFFEN, B., & Co., 608 S. Dearborn St., Chicago, Ill.

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FUCHS & LANG MFG. CO., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
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August, Charles, Corp., The, 416 Orleans St., Chicago, Ill.
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Bowers Printing Ink Co., 711 W. Lake St., Chicago, Ill.
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Inco Co., The, 1426 W. Third St., Cleveland, O.
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Johnson, Charles Eneu, & Co., Inc., 10th & Lombard Sts., Phila., Pa.
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Okie, Francis G., 247 S. Third St., Phila., Pa.
Roberts, Lewis, Inc., 72 Union St., Newark, N. J.
Roosen, H. D., Co., Ft. 20th-21st St., Brooklyn, N. Y.
Senelith Ink Co., Inc., The, 32-34 Greene St., New York, N. Y.
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Gelb, Joseph, Mfg. Co., 250 W. 54th St., New York, N. Y.
Macbeth Arc Lamp Co., 875 N. 28th St., Phila., Pa.
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Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
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Robertson, R. R., 400 W. Madison St., Chicago, Ill.
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International Printing Ink Corp., The, 636 11th Ave., New York, N. Y.

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Litho Trade Service Studio, 538 S. Clark St., Chicago, Ill.

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Repro-Art Machinery Co., Wayne Ave. & Berkeley St., Phila., Pa.
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Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Wesel Mfg. Co., Scranton, Pa.

METAL DECORATING EQUIPMENT

Wagner, Charles, Litho Machinery Co., Div. of National-Standard Co., 51 Park Ave., Hoboken, N. J.

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International Printing Ink Corp., The, 636 11th Ave., New York, N.Y.
McKinley Litho Supply Co., 1600 John St., Cincinnati, O.
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Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, J. H. & G. B., Inc., 47 Watts St., New York, N. Y.
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Eastman Kodak Co., Rochester, N. Y.
Gevaert Co. of America, Inc., The, 423 W. 55th St., New York, N. Y.
Haloid Co., The, 6 Haloid St., Rochester, N. Y.
Hammer Dry Plate & Film Co., Ohio Ave. & Miami St., St. Louis, Mo.
Norman-Willets Co., 318 W. Washing St., Chicago, Ill.

OFFSET PLATE MAKING SERVICE
(See Plate Making Service)

OPAQUE AND DEVELOPING INK

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International Printing Ink Corp., The, 636 11th Ave., New York, N. Y.
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Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

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Case & Risley Press Paper Co., Oneco, Conn.
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Neenah Paper Co., Neenah, Wis.
Northwest Paper Co., The, Cloquet, Minn.
Rhinelander Paper Co., Rhinelander, Wis.
Riegel Paper Co., 342 Madison Ave., New York, N. Y.
Warren, S. D., Co., 89 Broad St., Boston, Mass.
Watervliet Paper Co., Watervliet, Mich.
Whiting, Geo. A., Paper Co., Menasha, Wis.

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Advance Mfg. Co., Inc., Louisville, Ky.
Southworth Machine Co., 30 Warren Ave., Portland, Maine.
Strachan & Henshaw Co., Ltd., 7th at Grange St., Phila., Pa.

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PAPER AERATION

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PAPER HANGERS—Holdfast

Southworth Machine Co., 30 Warren Ave., Portland, Me.

PAPER JOGGING MACHINES

Southworth Machine Co., 30 Warren Ave., Portland, Me.

PARAFORMALDEHYDE—U. S. P.

Hunt, Philip A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
Mallinkrockdt Chemical Works, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.

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Strachan & Henshaw Co., Ltd., 7th at Grange St., Phila., Pa.
Wesel Mfg. Co., Scranton, Pa.

PHOTO LETTERING MACHINES

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Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Wesel Mfg. Co., Scranton, Pa.
Zarkin Machine Co., 335 E. 27th St., New York, N. Y.

PLATE GRAINING MACHINES

Fritsche, R., 145 Hudson St., New York, N. Y.
Hoe, R., & Co., Inc., 910 E. 138th St., at East River, New York, N. Y.
McKinley Litho Supply Co., 1600 John St., Cincinnati, O.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Wesel Mfg. Co., Scranton, Pa.
Zarkin Machine Co., Inc., 335 E. 27th St., New York, N. Y.

PLATE GRAINING MATERIALS

American Graded Sand Co., 2516 Greenview Ave., Chicago, Ill.
Carborundum Co., Niagara Falls, N.Y.
International Printing Ink Corp., The, 636 11th Ave., New York, N.Y.
Minnesota Mining & Manufacturing Company, Saint Paul, Minnesota.
New England Quartz Co. of New York, 450 Seventh Ave., New York, N. Y.
Seibold, J. H. & G. B., Inc., 47 Watts St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Zarkin Machine Co., Inc., 335 E. 27th St., New York, N. Y.

PLATE MAKING EQUIPMENT

California Ink Co., Inc., The, 545 Sansome St., San Francisco, Calif.
Lanston Monotype Machine Co., 24th at Locust St., Phila., Pa.
Miles Machinery Co., 18 E. 16th St., New York, N. Y.

RUTHERFORD MACHINERY CO., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
STRACHAN & HENSHAW CO., LTD., 7th at Grange St., Phila., Pa.
WESEL MFG. CO., Scranton, Pa.

PLATE MAKING SERVICE

CHICAGO LITHO PLATE GRAINING CO., 214 N. Clinton St., Chicago, Ill.
COLUMBIA OFFSET & REPRODUCTION CORP., 2 Duane St., New York, N. Y.
GRAPHIC ARTS CORP., 1104 Jackson Ave., Toledo, O.
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LITHOPLATE CO., 101 E. Clybourn St., Milwaukee, Wis.
OFFSET ENGRAVERS ASSOCIATES, INC., 42 E. 20th St., New York, N. Y.
OFFSET PRINTING PLATE CO. OF NEW YORK, INC., 100 Bleecker St., New York, N. Y.
PHOTO-LITHO PLATE SERVICE CO., 113 St. Clair Ave., N. E., Cleveland, O.
PRINTERS' OFFSET PLATE CO., 103 Lafayette St., New York, N. Y.
PROGRESSIVE FINE ARTS CO., 1027 N. Seventh St., Milwaukee, Wis.
RIGHTMIRE-BERG CO., 717 S. Wells St., Chicago, Ill.
SWART-REICHEL, INC., 461 Eighth Ave., New York, N. Y.
STEVENSON PHOTO COLOR SEPARATION CO., 222 W. Fourth St., Cincinnati, O.

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ALUMINUM CO. OF AMERICA, Gulf Bldg., Pittsburgh, Pa.
AMERICAN ZINC PRODUCTS CO., Greencastle, Ind.
EDES MFG. CO., THE, Plymouth, Mass.
ILLINOIS ZINC CO., 332 S. Michigan Ave., Chicago, Ill.
INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
LITHOGRAPHIC PLATE GRAINING CO. OF AMERICA, INC., 41 Box St., Brooklyn, N. Y.
MATTHIESSEN & HEGELER ZINC CO., LaSalle, Ill.
NATIONAL LITHO PLATE CO., THE, 35 Meadow St., Brooklyn, N. Y.
PHOTO-LITHO PLATE GRAINING CO., INC., 1207 S. Highland St., Baltimore, Md.
RELIABLE LITHOGRAPHIC PLATE CO., INC., 17 Vandewater St., New York, N. Y.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

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GEVAERT CO. OF AMERICA, INC., THE, 423 W. 55th St., New York, N. Y.
HAMMER DRY PLATE & FILM CO., Ohio Ave. & Miami St., St. Louis, Mo.
NORMAN-WILLETS CO., 318 W. Washington St., Chicago, Ill.

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SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

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ZARKIN MACHINE CO., INC., 335 E. 27th St., New York, N. Y.

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BINGHAM'S, SAM'L, SON MFG. CO., Chicago, Ill.
CHICAGO ROLLER CO., INC., 554 W. Harrison St., Chicago, Ill.
DAYCO DIVISION, Dayton Rubber Mfg. Co., Dayton, O.
GODFREY ROLLER COMPANY, 211 N. Camac St., Phila., Pa.
IDEAL ROLLER & MFG. CO., INC., 2512 W. 24th St., Chicago, Ill., and 21-24 Thirty-ninth Ave., Long Island City, N. Y.
RAPID ROLLER CO., Federal at 26th, Chicago, Ill.
ROBERTS & PORTER, INC., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
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VULCAN PROOFING CO., 58th St. & First Ave., Brooklyn, N. Y.

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PAASCHE AIRBRUSH CO., 1909 Diversey Parkway, Chicago, Ill.
SPRAYOMATIC PRODUCTS CO., 1120 Harrison St., Cincinnati, O.

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MONITOR CONTROLLER CO., INC., 51 S. Gay St., Baltimore, Md.

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Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Wesel Mfg. Co., Scranton, Pa.
Zarkin Machine Co., Inc., 335 E. 27th St., New York, N. Y.

SULPHUR

Mallinkrockdt Chemical Works, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Sinclair & Carroll Co., Inc., 591 11th Ave., New York, N. Y.

TAPE—Black Gummed

Metzger, Alfred E., 30 Irving Place, New York, N. Y.

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Kromberg, J., & Associates, C. P. A.'s, 461 Eighth Ave., New York, N. Y.
Levess, Herbert H., C. P. A., 360 W. 23rd St., New York, N. Y.
Reinish, Samuel S., C. P. A., 2 Lafayette St., New York, N. Y.

TRADE LITHOGRAPHERS

Hinson & McAuliffe Corp., 203 E. 12th St., New York, N. Y.

TRANSFER PAPER

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McKinley Litho Supply Co., 1600 John St., Cincinnati, O.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, J. H. & G. B., Inc., 47 Watts St., New York, N. Y.
Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

TRANSFER PROOFS—TYPE IMPRESSIONS

New York Type Transfer Service, 237 Lafayette St., New York, N. Y.

TUSCHE

International Printing Ink Corp., The, 636 11th Ave., New York, N. Y.
Korn, Wm., Inc., 260 West St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

TYPEWRITER COMPOSITION

Gallant Service, Inc., 81 W. Van Buren St., Chicago, Ill.
Kopy Komposers, Bourse Building, Phila., Pa.

TYPEWRITER RIBBONS
Carbon Paper or Fabric

Remington-Rand, Buffalo, N. Y.

TYPEWRITERS

International Electric Writing Machines Division of International Business Machines Corporation, 590 Madison Ave., New York, N. Y.
Remington-Rand, Inc., Buffalo, N. Y.
Royal Typewriter Co., Two Park Ave., New York, N. Y.
Smith, L. C., & Corona Typewriter, Inc., Syracuse, N. Y.
Underwood Elliott Fisher Co., One Park Ave., New York, N. Y.

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Douthitt Corp., The, 650 W. Baltimore Ave., Detroit, Mich.
Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
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Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Sta., Chicago, Ill.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Sullebarger, E. T., Co., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.
Sweigard-Ideal Co., 6122 N. 21st St., Phila., Pa.
Wesel Mfg. Co., Scranton, Pa.
Zarkin Machine Co., 335 E. 27th St., New York, N. Y.

VARNISH

Ault & Wiborg Corp., 75 Varick St., New York, N. Y.
Carter, C. W. H., 100 Varick St., New York, N. Y.
Hilo Varnish Corp., 42-60 Stewart Ave., Brooklyn, N. Y.
Roosen, H. D., Co., Ft. of 20th & 21st St., Brooklyn, N. Y.
Siebold, J. H. & G. B., Inc., 47 Watts St., New York, N. Y.
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Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

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Carter, C. W. H., 100 Varick St., New York, N. Y.
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International Printing Ink Corp., The, 636 11th Ave., New York, N. Y.
Sinclair & Carroll Co., Inc., 591 11th Ave., New York, N. Y.
Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

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International Printing Ink Corp., The, 636 11th Ave., New York, N. Y.

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Norman-Willets Co., 318 W. Washington St., Chicago, Ill.

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Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Sta., Chicago, Ill.
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Photography and Color Correction

Step Wedges for Color Work. G. L. Wakefield. *Process Engravers' Monthly*, 45, No. 535, July 1938, p. 234. Step wedges on bromide paper, used to achieve accurate color balance in making color separation negatives, can be made by exposing a strip of suitable bromide paper in steps to produce on development a wedge ranging from black to white with a good scale of tones between. The method of preparation of a transparent wedge, from which projection prints of varying sizes can be made, is given in detail.

Coloring Materials. A. Murray. Assigned to Eastman Kodak Co. *U. S. Patent* No. 2,108,503. In a palette of special pigments employed in the process disclosed in U. S. 2,008,290, a sketch intended for photomechanical reproduction is drawn with pigments containing predetermined amounts of fluorescent material so that when the sketch is illuminated by ultraviolet light, the distortion in color balance is correct to compensate for deficiencies in the final printing inks. The reproduction will look the same as the sketch illuminated by white light, i. e., as intended by the artist. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 24, p. 308 (1938).)

The New Agfacolor. W. Schneider and G. Wilmanns. *Veroffentlichungen der wissenschaftlichen Zentral-Laboratorium Photographische Abteilung, Agfa*, 5: 29–36, 1937. The new Agfacolor film is coated with three light-sensitive layers separated by two clear gelatin interlayers. The top layer is blue-sensitive and contains a yellow filter dye. The middle layer is green- and the bottom layer is red-sensitized. Each emulsion layer contains a nondiffusing dye-forming component that reacts with a phenylenediamine or a similar dye developer that forms a colored image in the presence of silver halide. The dye is complementary to the color to which the layer is sensitized. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 24, p. 281 (1938).)

Making White-Corrected Positives for the Production of Printing Plates. W. J. Wilkinson. Assigned to Miehle Printing Press and Mfg. Co. *U. S. Patent* No. 2,114,325. For correcting the whites in photomechanical color printing plates, a positive print of one of the separation negatives is opaqued except for its white values. A negative made from this print is superimposed with each of the separation negatives for making positives which are quite clear in their white areas. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 24, p. 308 (1938).)

Analysis Filters in Color Reproduction. H. D. Murray and D. A. Spencer. *Photographic Journal*, 78, July 1938, pp. 474–82. For practical use, variations on the existing standard tricolor filters are likely to produce a marked improvement in the accuracy of the reproduction process: (1) The analysis sensitivity should fall off in the extreme red from a maximum at say 6250 A.U. to zero at 7000 A.U. This can be effected by employing emulsions with the requisite lack of sensitivity in these regions. (2) Hue matching would be improved if a filter-emulsion combination could be found in practice which gave a maximum green analysis sensitivity at about 5400 A.U. falling to zero at 6000 A.U. When masking methods, restricted to three separation negatives only, are employed, the use of a positive from the green record bound with the blue filter-negative has the most theoretical justification.

Masking in Photolithography. A. H. Reiser. *Lithographers' Journal*, 23, No. 4, Aug. 1938, pp. 195, 215. Bassist's new masking apparatus consists of two parts, a single frame designed to hold the unexposed plate in the camera, which dispenses with the reversing prism in making the master and reversed masking negative; and a double hinged frame, so designed as to permit the master negative and its mask to be mounted together in register quickly and easily, and to make possible the exposure of the final positive through the master alone or through both negatives in contact and in register. This latter enables the lithographer to control the contrast in the final positive by varying the exposure through the master as compared with that through both negatives in contact.

Dufaycolor and the Plate Maker. T. Baker. *The Midwestern Lithographer*, 3, No. 4, Aug. 1938, pp. 5–6. In four-color plate making from Dufaycolor films, the special "narrow-cut" filters prepared by Dufaycolor, Inc., should be used in making separation negatives. A gray step wedge mounted upon a blank piece of reseau and

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placed beside the transparency is indispensable. The exposed separation negatives should be developed together, and the inks used in printing should be absolutely standard.

Half-tone Negatives. T. S. Hiller. *The Photo-Lithographer*, 6, No. 8, Aug. 1938, pp. 21–3. This article contains a detailed discussion of (1) the qualifications half-tone negatives must possess to produce good offset press plates, (2) methods of standardizing photographic operations, (3) optical factors involved in negative production, including Stephen Horgan's method of half-tone screening, (4) contrast in negatives, and (5) of correct flashing procedure.

Strip Film. A. H. Reiser. *Printing Equipment Engineer*, 56, No. 5, Aug. 1938, pp. 38, 64–5. Strip film is a highly contrasty orthochromatic film consisting of a transparent base supporting a thin membrane which contains the emulsion. The film may be stripped face down with clear water, but if permanent adhesion is desired or if the film must be stripped face up, an adhesive solution must be used. Camera room and stripping technique is given. Because of its many advantages over wet-plate, chief among which are economy and simplicity, the use of strip film in photo-engraving and lithography has steadily increased.

Planographic Printing Surfaces and Plate Preparation

A Screenless Reproduction Process. F. H. Bloom. *Commerzielle Photographie*, 1937, 12, pp. 395–7. The original negative is exposed to a sensitized zinc plate, which is then developed, slightly etched, dried, and placed in the press for use. This photo-lithographic process enables reproduction of aerial prints for military purposes to be made with a saving of time and less loss of detail as compared with the half-tone process. (*Photographic Abstracts*, 18, No. 70, 1938, pp. 87–8.)

Printing-Surfaces. C. B. Aller. *British Patent* No. 483, 349. A planographic printing-plate is constructed of two different metallic materials which are ink-refusing and ink-receiving, and respectively consist of stainless steel, chromium, or chromium alloys, and copper, nickel, or similar metal having the property of adhering to printing-ink. The plate may be made in flat or curved form, and the layer of stainless steel, chromium, or chromium alloy may be a thin layer applied to a strong base such as ordinary steel. The copper or nickel layer is preferably applied as a final thin coating to the stainless steel etc. and by means of etching, the design to be printed is produced by eating away the copper etc. layer in parts corresponding to the design. In applying thin layers of metal in building up the plate electrolytic processes may be employed in which a bath is employed having a solution the pH of which is of the order 2.5–1.5 or lower. The layers of metal may also be applied by spraying, cathode atomizing, or by chemical precipitation.

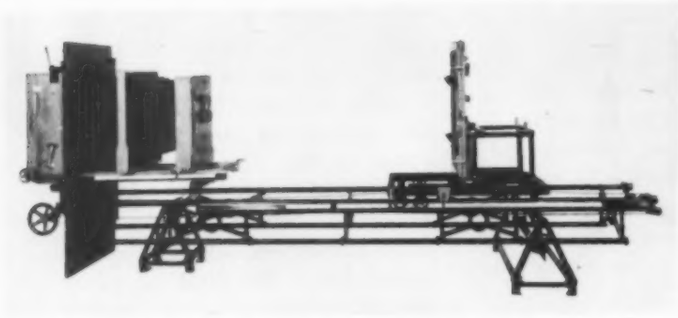
Printing-Surfaces. G. E. Akester. *British Patent* No. 485,496. An offset powder for transferring an impression on paper to a zinc, aluminum, etc. plate for multicolor lithographic printing consists of an oxide of iron, such as ferric sesquioxide, and an aniline dye, such as methyl violet, in such proportions as 16 parts by weight of iron oxide and 3 parts by weight of the dye. The dry constituents are mixed together, and a liquid such as methylated spirit is added. The whole is mixed until a stiff paste is formed, which is then allowed to dry, and the resulting powder is sifted.

Lithographic Printing Plate. W. S. Field. *U. S. Patent* No. 2,126,181. The process of chemically graining a zinc lithographic plate which comprises cleaning the surface of the plate with a suitable cleansing agent, rinsing the surface of said plate with water or the like, treating the surface of said plate with a heated solution of a hydrolyzable acid phosphate of a divalent metal from the class of phosphates adapted for the protective coating of zinc for about thirty minutes, and rinsing the said plate.

Processes of Making Lithographic Reproductions. F. H. Bloom. *U. S. Patent* No. 2,122,404. A light sensitive element comprising a substantially gelatin-free egg-albumin, treated in the presence of heat with a light desensitizing dye and containing a chromatizing agent and which after exposure to light and without further treatment other than inking, washing, and clearing, will produce clear and evenly colored prints at high speed and over an extended press run.

Equipment and Materials

Device for Observing Color Register Indications of Color Prints Discharged from a Multicolor Press. R. E. Wallace. *U. S. Patent* No. 2,124,802. A device for observing color register marks upon a printed sheet moving in a linear direction, comprising a rotatably mounted reflector adapted to reflect the image of the register marks in a constant line of direction during a given length of movement of said marks, lenses interposed in the line of the reflected image, a reflector interposed in the line of the reflected image having an opening therethrough, means directing a beam of light onto said perforated reflector to be reflected onto the movable reflector and from thence to the printed sheet to illuminate the register mark throughout its path of movement, means for operating said rotatable reflector to follow the movement of the



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register mark on the printed sheet and direct an image of said mark in a constant line of direction through said lenses and through the opening in said perforated reflector.

Exhibition Review, 1938. *Reproduktion*, 9: 40–43, March, 1938. Among the new photographic apparatus is the "Verticolor," a device of Hoh and Hahne for making half-tone screen separation negatives from miniature color transparencies in the dark-room. It is a vertical enlarger with a vacuum film holder for the film that is being exposed, and with a circular screen held over the film. The Klimsch "Stator" is a machine which is said to produce more even sensitive coatings on offset plates. The plate is drawn slowly upward past a meniscus of solution, and above that, past a heating device to dry the coating. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 24, pp. 279–80 (1938).)

Dampening System for Lithographic and Analogous Presses. J. G. Goedike. *U. S. Patent* No. 2,126,768. The method of dampening printing surfaces of lithographic and analogous printing members, which consists in feeding a dampening fluid from a source of supply in two directions through an endless path to a dampening system, and transmitting said dampening fluid to said printing surface through said dampening system.

Illumination. I. H. Sayre. *The Midwestern Lithographer*, 3, No. 3, July 1938, pp. 6, 8, 10, 11. This article contains a comparison of direct current and alternating current arc lamps, a discussion of arc voltage, general rules for the operation and care of lamps, and causes for short carbon life, poor light, and graphitization. A table giving the exposure to be used for a given distance of the lamp from the plate is included.

Paper and Ink

Sorption of Water Vapor by Papermaking Materials. C. O. Seborg, F. A. Simmonds, and P. K. Baird. *Technical Association Papers*, Series 21, No. 1. June 1938, pp. 358–63. The hygroscopicity of a pulp is increased by extreme heating and lowered by bleaching. The fact that repeated drying and soaking treatments reduce the desorption hygroscopicity of a pulp above 50 per cent relative humidity and that the adsorption moisture contents in the same humidity range or in the same moisture content range are not similarly affected by successive desorptions, cannot be explained on the basis of current theories of sorption mechanism.

Paper and the Scumming of Lithographic Plates. Anonymous. *Patra Journal*, 2, No. 1. July 1938, pp. 36–41. Scumming in lithographic printing may be caused by the removal and inking up of surface fibers of a fluffy paper, and by the presence of grit in paper. This grit causes abrasion of the grain on the plate and removal of the desensitizing film of gum arabic. Excess alum in paper is a definite cause of scumming in direct lithography and a possible cause in offset on long runs. Alum causes aluminum plates to scum sooner and move severely than zinc plates. Casein may also be a source of scumming. Salt or acid etches in the damping water reduce scumming due to alum and casein.

Influence of Atmospheric Humidity and Temperature on the Moisture Content of Paper Board. R. W. K. Ulm. *Technical Association Papers*, Series 21, No 1, June 1938, pp. 157–61. In the higher range of relative humidity, the effect of temperature on the moisture content of board in equilibrium with an atmosphere of a given relative humidity, is relatively small. In the lower range of relative humidity, the effect of temperature is larger the lower the relative humidity. At a constant absolute humidity the moisture content at equilibrium decreases with increasing temperature. It is apparent, therefore, that the moisture content of a piece of board is determined by fixing any two of the three variables, temperature, absolute humidity, and relative humidity.

General

New Developments in the Graphic Arts. L. H. Allen. *Advertising and Publishing Production Yearbook*, No. 4, 1938, pp. 355–7. A discussion of new developments in photo-engraving, design, transmission, printing processes, photography, color, and typography. Chief among these are (1) the spectro-photometer, used for analyzing, matching and standardizing colors; (2) facsimile telegraphy, whereby printed matter and drawings may be transmitted to a distant point; (3) Finch Telechrome System of sending natural color photographs over long distance telephone wires; (4) the Lenzart process employing mercury ink to print planographic plates on relief printing equipment; (5) the Graph-O-Screen Stencil, designed to print detail and line with sharpness; (6) invisible color; (7) Cellograph half-tones, and (8) the Colorgraph method of reproducing full color half-tones from black and white engravings.

Set-off Due to Faulty Adjustment of An Antiset-off Sprayer Anonymous. *Patra Journal*, 2, No. 1. July 1938, pp. 7–9. When a gum antiset-off sprayer was used, set-off was found to be due to the fact that the fine particles of the gum solution sprayed were not sufficiently dry on reaching the sheet, and the sticky particles adhered to the ink and caused sticking of the sheets. The following factors can cause this: the sprayer may be too close to the sheet, the air pressure behind the nozzle may

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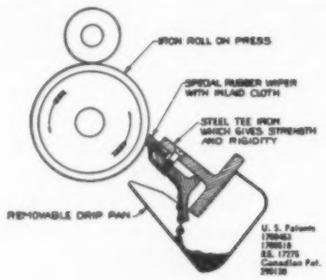
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be too low, the nozzle orifice may be too large, or the composition of the spraying solution may be at fault.

The Work of Patra: Some Valuable Investigations. G. L. Riddell. *British and Colonial Printer and Stationer*, 122, No. 504, June 16, 1938, pp. 633–5. The Patra laboratories are doing work upon the drying and working qualities of inks, the optical and mechanical printing qualities of paper, printing pressure, and ink transference. In the realm of lithography the wetting of a surface by a liquid is being studied, and in the photogravure field an investigation of the etching process is under way.

Tiffany and Woolworth

(*from page 47*)

As mentioned in my article in the September issue of THE PHOTO-LITHOGRAPHER, the industry of photo-lithography has suffered in recent years from the invasion of too many concerns made up of people who either know next to nothing about the process or who know the process in its mechanical and technical phases but are lacking in business experience and abilities.

One of the results has been that consumers have been disappointed with a lot of photo-lithographed material that has fallen far short of the qualities they have been led to expect and that has been far below what we might call the median of quality. Many consumers have condemned the entire process and all lithographers because of such failures, instead of placing the blame where it belongs—with the individual lithographer who has fallen down on the job.

On first thought the foregoing seems to furnish a dismal setting for the competent photo-lithographer who is out to land some of the really choice work in his field. When we look into the matter more thoroughly, our belief is that the good lithographer can find in such circumstances many advantages for himself.

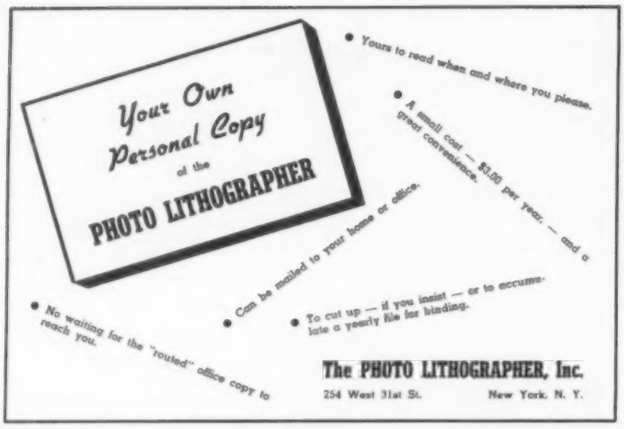
Regardless of how far the inexperienced photo-lithographers may have gone in disparaging the process by delivering poor work, there are so many intrinsic and exclusive merits in the process that it just can't be ignored by the astute buyer of lithographed material. Consequently, although he may be soured for awhile, the day soon comes when he finds it very advisable, in the interests of efficient buying, to consider the process again. When that time comes there is one sure thing—he will not be inveigled into dealing with the slip-shod photo-lithographer. He will instead go out of his way to find one who has made a reputation for good work.

THE QUALITY SHOP HAS LOWER SELLING COSTS.—It is an erroneous idea that because a lithographic establishment is determined to stick to high standards of product, it is destined to remain a much smaller shop than the plant that takes work on a price basis only. Some of the largest plants in the country have been built on the basis of work of high quality. And here is one important fact to keep in mind regarding such establishments—whereas their cheap competitors must constantly maintain a large force of salesmen (or shall we say order takers) in which expensive turnover is frequent because of the vicissitudes of selling on the basis of low price only, the shop known for high quality work enjoys the benefits of what we might call diminishing costs of selling. The work such a shop obtains is, in itself, valuable sales promotion material and customers who are obtained on the basis of high quality products and services do not have to be re-sold constantly. Many of them look on the quality photo-lithographer as an essential part of their buying market, to be dealt with fairly because they have respect for his judgments and the kind of work he turns out.

Another angle to this matter of benefits to the high quality lithographer in competition with other lithographers is that while he need never be shut out from competition on so-called cheap work, in which there is always a chance to convert the cheap buyer into a buyer of quality material, the buyer of high quality lithographed products is very unlikely to waste his time and money by calling in the lithographer who is noted for the cheap work he does. So, if anything, new business opportunities are greater for the high quality lithographer.

There are many erroneous notions held by printing buyers all over the country regarding the merits of photo-lithography. Some of them think of it only as an inexpensive way to get reproductions in cases where cheap materials and cheap labor won't react unfavorably, such as for internal forms, etc. Others think it is a process useful only in the manufacture of large posters and multicolored point-of-sales advertising material—that it has no merits as a process to give them direct mail literature, etc.

The high quality lithographer has a man-size job cut out for himself when he endeavors to dispel some of these misconceptions that are deeply rooted in the minds of many printing buyers, to the end that he will get his just share of the general printing business in his territory. But if he has built up a reputation for turning out work of high quality, his job will be much easier. He can go to any interview fortified with plenty of proof of his abilities, and the abilities of the process to do first class reproduction jobs that in many kinds of work not only will compare favorably with work done by other processes, but in some instances will be much better—of higher quality *because most capable of achieving desired and specific results.*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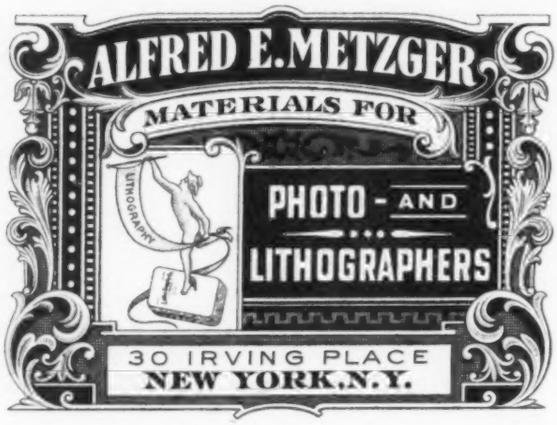

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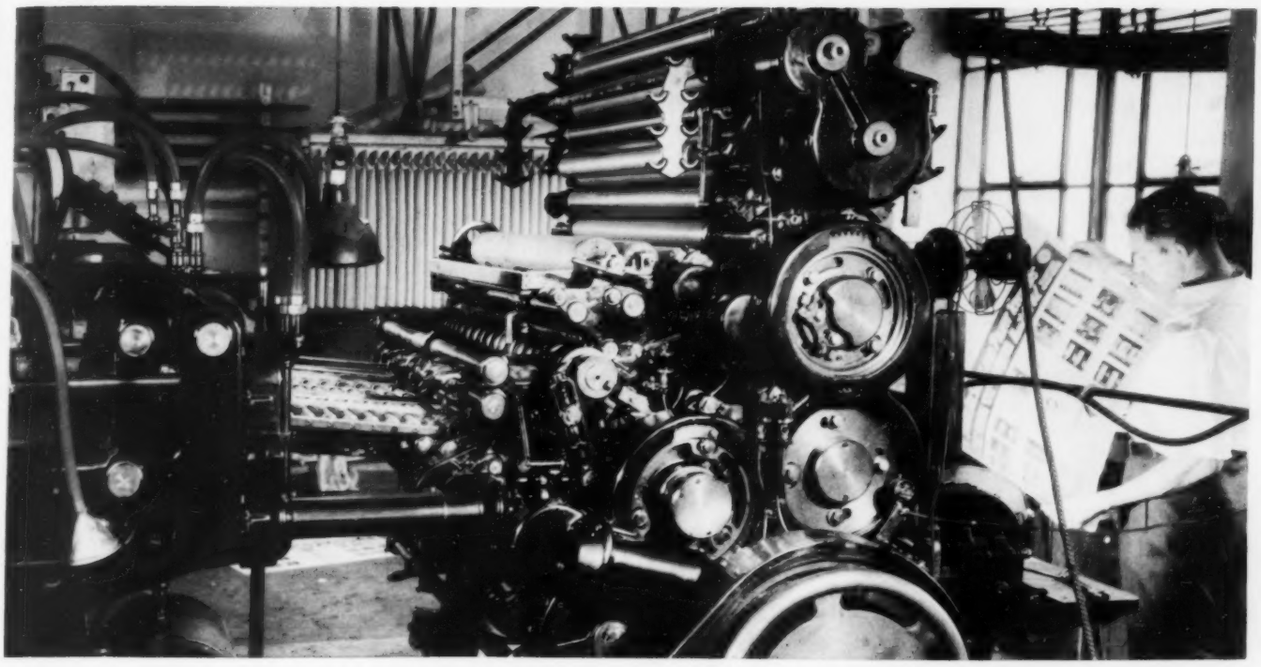

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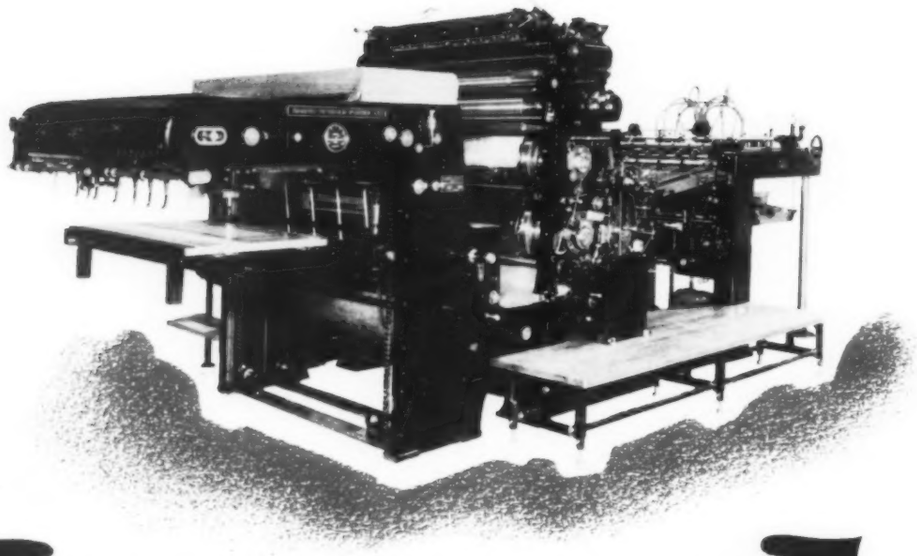

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Harris Offset Presses

ALWAYS ACCEPTED AS PROFIT EQUIPMENT IN THE PRODUCTION OF THE PHOTO-LITHOGRAPHER

Pressroom profits can be determined in only one way—the number of high grade, saleable sheets turned out during a day's run. Harris Offset Presses are designed and engineered for this result. Harris press speed is supported by engineering accuracy and precision manufacture. The Harris LSQ single color 26″ x 40″ shown here is representative of the new line of eight sizes of Harris Offset Presses that completely cover the requirements of all the Offset Market.

HARRIS + SEYBOLD + POTTER CO.

General Offices: 4510 East 71st Street, Cleveland, Ohio. *Harris Sales Offices:* New York, 330 West 42nd Street; Chicago, 343 South Dearborn Street; Dayton, 819 Washington Street; San Francisco, 420 Market Street. *Factories:* Cleveland, Dayton

PIONEER BUILDERS OF SUCCESSFUL OFFSET PRESSES